Highway 41 Corridor Master Plan Update

A Guide for Land Use and Transportation Improvements

Approved by KMPO Board December 8, 2016

Prepared by: Kootenai Metropolitan Planning Organization

December 2016

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October 2016

Development of this update to the Plan was a collaborative effort with Kootenai Metropolitan Planning Organization (KMPO), Kootenai County Area Transportation Team (KCATT), Project Stakeholders, and the Public. A sincere "thank you" to all that were involved in updating the corridor plan.

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Contents

CHAPTER 1 – INTRODUCTION 5
ORIGINAL SH 41 CORRIDOR MASTER PLAN 2002 ~ HISTORY 6
CORRIDOR STUDY AREA AND JURISDICTION 8
POPULATION GROWTH 10
PUBLIC INVOLVEMENT 14
CHAPTER 2 – LAND USE & TRANSPORTATION 15
AGENCIES & JURISDICTION EXISTING COMPREHENSIVE PLANS AND ZONING 15
COMMUNITY DESIGN 29
PRIORITY CORRIDORS 30
LAND USE ISSUES 33
STREET CONNECTIVITY 33
PEDESTRIAN AND BICYCLE IMPROVEMENTS 38
PLANNED IMPROVEMENTS 42
IMPROVEMENTS NEEDED TO THE CORRIDOR 42
INFRASTRUCTURE 42
INTERGOVERNMENTAL COORDINATION 43
LAND USE AREAS, SUB-CATEGORIES & DENSITIES 45
TRAVEL DEMAND MODEL OVERVIEW 49
KMPO TRAVEL DEMAND MODEL/LAND USE ADAPTATION 50
LAND USE TRIP TOTALS 55
CHAPTER 3 - BACKAGE ROADS ANALYSIS 69
CHAPTER 4 - TRAFFIC OPERATIONS /MEASURES OF EFFECTIVENESS (MOES) & LOS 91
ROADWAY IMPROVEMENTS 91
TRAFFIC VOLUMES 91
SYNCHRO ANALYSIS - INTERSECTION LEVEL OF SERVICE 92
ACCIDENT SUMMARY 101
ROADWAY SEGMENT ACCIDENTS 104
INTERSECTION ACCIDENTS 106
TOTAL ACCIDENTS ALONG THE CORRIDOR 107
RAILROAD INTERSECTION ACCIDENTS 116
CAPACITY IMPROVEMENTS 117
STATE HIGHWAY 41 117
ACCESS CONTROL MANAGEMENT & IMPLEMENTATION 118
IDAHO DEPARTMENT OF TRANSPORTATION DISTRICT 1 REQUIREMENTS: 124
EXISTING ACCESS CONTROL ~ HIGHWAY 41 144
DEVELOPMENT STANDARDS 144
TRAFFIC SIGNALS 145
PLANNED ROADWAY PROJECTS 146

CHAPTER 5 - TRANSPORTATION & DEVELOPMENT 150

INTRODUCTION 150
LAND USE/ECONOMIC DEVELOPMENT 150
ZONING AND LAND USE REGULATIONS 150
TRANSPORTATION PLAN 150
DEVELOPMENT STANDARDS 155
ROAD WIDENING DEVELOPMENT DRIVEN PROJECTS 156
TRANSPORTATION SYSTEM/ DEMAND MANAGEMENT 160

CHAPTER 6 - ENVIRONMENTAL REVIEW 161

STUDY AREA 161
BUILT ENVIRONMENT ~ EXISTING LAND USE AND ZONING 161
MAJOR UTILITIES 162
RAIL TRANSPORTATION 163
NATURAL ENVIRONMENT 163
CRITICAL LAND USE AND ENVIRONMENTAL FACTORS 165

FIGURE 1 - SH 41 CORRIDOR AREA 9
FIGURE 2 - POPULATION PERCENT CHANGE IN GROWTH 2000 - 2010 12
FIGURE 3 - HIGHWAY DISTRICTS WITHIN THE CORRIDOR 18
FIGURE 4 - KOOTENAI COUNTY PARTIAL COMPREHENSIVE PLAN 19
FIGURE 5 - CITY OF POST FALLS CURRENT LAND USE ZONING 20
FIGURE 6 CITY OF POST FALLS FUTURE LAND USE MAP 22
FIGURE 7 CITY OF POST FALLS ZONING MAP - CITY OF POST FALLS ZONING MAP – NOVEMBER 2014 23
FIGURE 8 - CITY OF RATHDRUM FUTURE LAND MAP 24
FIGURE 9 - PRIORITY CORRIDORS MAP 32
FIGURE 10 - 2010 WHERE PEOPLE LIVE, WORK & SHOP 34
FIGURE 11 - 2014 WHERE PEOPLE, LIVE & SHOP 35
FIGURE 12 - 2020 WHERE PEOPLE LIVE, WORK & SHOP 36
FIGURE 13 - 2035 WHERE PEOPLE LIVE, WORK & SHOP 37
FIGURE 14 - CITYLINK TRANSIT 38
FIGURE 15 - 2014 REGIONAL NON-MOTORIZED MAP CITY OF POST FALLS 40
FIGURE 16 - 2014 REGIONAL NON-MOTORIZED NETWORK - CITY OF RATHDRUM 41
FIGURE 17 - COMBINED SH 41 CORRIDOR MIXED LAND USE MAP 44
FIGURE 18 - LAND USE BASED ON NAICS CODES 46
FIGURE 19 - FUTURE LAND USE & SUBCATEGORIES PERCENTAGES FOR GROWTH 54
FIGURE 20 - ITD AUTOMATIC TRAFFIC COUNTERS MAP 56
FIGURE 21 – 2035 SH 41 NO-BUILD MODEL V/C RATIOS 61
FIGURE 22 - 2035 SH 41 BUILD MODEL V/C RATIOS 62
FIGURE 23 - BACKAGE ROADS - SCENARIO'S 73
FIGURE 24 - BACKAGE ROADS LOCATION MAP 74
FIGURE 25 - SCENARIO BASE - 2035 FULL BUILD 78

FIGURE 26 - SCENARIO #1 - 2035 BUILD - NO BACKAGE ROADS 79
FIGURE 27 - SCENARIO #2 - NO HUETTER BYPASS/BACKAGE ROADS 80
FIGURE 28 - SCENARIO #3 - 2035 BUILD - 1/4 MILE BACKAGE ROADS 81
FIGURE 29 - SCENARIO #4 - 2035 BUILD - 1/2 MILE BACKAGE ROADS 82
FIGURE 30 - SCENARIO #5 - 2035 BUILD - NO HUETTER BYPASS 83
FIGURE 31 - SCENARIO #BASE - 2035 BUILD - VOLUME TO CAPACITY PLOT 84
FIGURE 32 - SCENARIO 31 - 2035 BUILD - VOLUME TO CAPACITY PLOT 85
FIGURE 33 - SCENARIO #2 - 2035 BUILD - VOLUME TO CAPACITY PLOT 86
FIGURE 34 - SCENARIO #3 - 2035 BUILD - VOLUME TO CAPACITY PLOT 87
FIGURE 35 - SCENARIO #4 - 2035 BUILD - VOLUME TO CAPACITY PLOT 88
FIGURE 36 - SCENARIO #5 - 2035 BUILD - VOLUME TO CAPACITY PLOT 89
FIGURE 37 - SCENARIO #6 - 2035 BUILD - VOLUME TO CAPACITY PLOT 90
FIGURE 38 - STATE HIGHWAY 41 - ITD MILEPOST LOG 102
FIGURE 39 - SH 41 INTERSECTION RELATED ACCIDENTS 106
FIGURE 40 - TOTAL ACCIDENTS BY TYPE ALONG SH 41 107
FIGURE 41 - TOTAL NUMBER OF ACCIDENTS BY MILEPOST LOCATION ALONG SH 41 108
FIGURE 42 – SH 41 CORRIDOR ACCIDENTS 2011 TO MARCH 2015 110
FIGURE 43 – SH 41 CORRIDOR ACCIDENTS BY YEAR 111
FIGURE 44 – SH 41 CORRIDOR REAR END ACCIDENTS 113
FIGURE 45 – SH 41 CORRIDOR REAR END ACCIDENTS BY YEAR 114
FIGURE 46 - CORRIDOR IMPROVEMENT STRATEGY PLAN 120
FIGURE 47 - PUBLIC ROAD/DRIVEWAY SPACING DIAGRAM - IDAPA 123
FIGURE 48 - CITY OF POST FALLS - PEDESTRIAN/BICYCLE TRAIL PLAN, MAY 2012 154
FIGURE 49 - SH 41 PROPOSED TYPICAL STREET INTERSECTION PLAN 156
FIGURE 50 - SH 41 - TYPICAL ROADWAY SECTIONS 157
FIGURE 51 - SH 41 - TYPICAL ROADWAY SECTIONS (CONTINUED) 158
FIGURE 52 - SH 41 - TYPICAL ROADWAY SECTIONS (CONTINUED) 159

TABLES:

TABLE 1 - GROWTH PROJECTIONS 11
TABLE 2 - CITIES POPULATION FOR THE CORRIDOR & FORECAST GROWTH 13
TABLE 3 - LAND USE DENSITIES 48
TABLE 4 - LAND USE DESIGNATIONS 52
TABLE 5 - SUMMARY OF MODEL TRIP TOTALS SH 41 CORRIDOR AREA ONLY 55
TABLE 6- ITD AUTOMATIC TRAFFIC RECORDERS GROWTH COMPARISON 57
TABLE 7- EXISTING CORRIDOR TRAVEL TIMES 58
TABLE 8 - SUMMARY OF VMT & PM PK HR MODEL VOLUMES ALONG SH 41 59
TABLE 9 - SH 41 % DIFFERENCE IN GROWTH VOLUMES 2010 - 2035 63
TABLE 10 - GREENSFERRY ROAD % DIFFERENCE IN GROWTH VOLUMES 2010 TO 2035 64
TABLE 11 MEYER ROAD % DIFFERENCE IN GROWTH VOLUMES 2010 TO 2035 64
TABLE 12 - EAST-WEST ROADWAYS % DIFFERENCE IN GROWTH VOLUMES 2010 TO 2035 65
TABLE 13 - PM PK HR MODEL VOLUMES & ESTIMATED ADT ALONG SH 41 66
TABLE 14 - PM PK HR MODEL VOLUMES & ESTIMATED ADT ALONG GREENSFERRY & MEYER ROADS 67
TABLE 15 - PM PK HR MODEL VOLUMES & ESTIMATED ADT ALONG EAST-WEST ROADWAYS 68
TABLE 16 - 2035 PM PK HR & CALCULATED AWDT VOLUMES – BACKAGE ROADS SCENARIO ANALYSIS 75

TABLE 17- INTERSECTION LOS - SH 41 94
TABLE 18 - INTERSECTION LOS SUMMARY - GREENSFERRY RD. 94
TABLE 19 - INTERSECTION LOS SUMMARY - MEYER RD. 94
TABLE 20 - SIGNALIZED INTERSECTION RESULTS PHV/DHV/LOS- SH 41 ONLY 96
TABLE 21 - SUMMARY LOS ALL SIGNALIZED INTERSECTIONS 97
TABLE 22 - CORRIDOR MOE'S & ARTERIAL LOS 99
TABLE 23 - ROADWAY CRASH RATE FORMULA 104
TABLE 24 - SH 41 ACCIDENT SEGMENT SUMMARY 105
TABLE 25 – SH 41 INTERSECTION ACCIDENT SUMMARY 2011 - 2015 109
TABLE 26 - RAILROAD ACCIDENTS 2000 - 2015 116
TABLE 27 - SUMMARY OF PROPOSED INTERSECTION CONTROLS & ACCESS RESTRICTIONS SH 41 121
TABLE 28 - IDAPA 30.03.42 ACCESS SPACING REQUIREMENTS 123
TABLE 29 - ITD ACCESS MANAGEMENT IMPLEMENTATION PLAN - PRINCIPAL ARTERIAL ROUTE 127
TABLE 30 - ACCESS MANAGEMENT IMPLEMENTATION PLAN – ROADWAY PLAN 139
TABLE 31 - PLANNED ROADWAY PROJECTS WITHIN THE SH 41 CORRIDOR 148
TABLE 32 - PLANNED PROJECTS THROUGH 2035 149

APPENDICES 164

CHAPTER 1 – INTRODUCTION

Transportation planning is a critical component of anticipating and accommodating continued growth and development. The transportation network is the circulation system of a region, providing access and mobility to a hugely diverse group of users. As the population in Kootenai County continues to grow, effective measures will need to be taken to accommodate traffic to move people and goods. State Highway 41 (SH 41) is an important priority corridor within our region and provides an important north-south access between the Cities of Post Falls and Rathdrum.

This update has been a collaborative team effort between; KMPO staff, the Idaho Transportation Department, the City of Post Falls, the City of Rathdrum, Post Falls Highway District, Lakes Highway District, Kootenai County and the Kootenai Area Transportation Team (KCATT) and the public.

The Kootenai Metropolitan Planning Organization (KMPO) is the federally designated Metropolitan Planning Organization (MPO) for the Kootenai County, Idaho metropolitan area. The KMPO Board oversees the KMPO operations and activities of the organization. KMPO also has a technical transportation committee, KCATT, which meets monthly to discuss and advise the KMPO Board on technical transportation issues. The purpose of KMPO is to provide coordinated, cooperative and continuous transportation planning within the Metropolitan Planning Area, which is all of Kootenai County.

The SH 41 Corridor Master Plan makes updates to: turning movement traffic counts, land uses/categories, Average land use densities, planned roadway projects, developer driven projects, 2010 decennial census traffic analysis zones (TAZ's), travel demand modeling network and volumes, federal functional classifications, access control/permitted approach locations, accident data for intersections and roadway segments, and the level of service/capacities within the corridor that have changed since the original plan was written in 2002. Additional information has been added such as comprehensive plans, railroad crossing accidents, non-motorized plan, priority corridor map, transit and regional population growth.

The goal of the update was also to gather comments from the jurisdictional stakeholders and the general public that have been incorporated as part of the draft final update. This was done to ascertain current concerns, conditions and long term needs with the ultimate goal of final adoption of the corridor master plan by KMPO and the partner jurisdictions. The public involvement process was followed throughout the update of the plan. The project was initiated through meetings and correspondence with the jurisdictions, KCATT and the KMPO Board. The text document draft was reviewed twice by KCATT members. Once the revisions were made to the plan document, three public open houses were held with presentations and an opportunity for the public to comment. Following the last public open house, a final public review include a 30 day public comment period occurred to receive any additional comments and to incorporate them into this document. The final Draft SH 41 Corridor Master Plan was reviewed by KCATT and a recommendation was made to the KMPO Board for approval of the Plan. Following the KMPO board's acceptance the Plan, the document will go before the local jurisdictions, highway districts and Idaho Transportation Department for acceptance to be incorporated into their local plans and policy programs.

The SH 41 corridor plan uses the existing travel demand model conditions and looks out to the future conditions using the 2035 travel demand model. The needs of the area to preserve and manage highway function and access, while enhancing current and future development potential have been addressed through a concerted effort with the agencies within the corridor and a public outreach program with affected stakeholders. Agencies of local and regional jurisdiction and property owners have a vested interest in the continued management of the corridor to sustain its functional integrity and maintain the community's quality of life.

The impacts of growth within the Rathdrum Prairie, and within the Highway 41 corridor in particular will impact land use and resulting traffic generation and distribution. Traffic volumes are projected to increase by an Average of approximately 63% within the corridor by the future out-year of 2035. Access management will be a key component of the preservation of the state highway 41 function. To further this interest, community values and visions, engineering alternatives, community acceptance, and fundable solutions were used to determine the recommended blueprint for the SH 41 Corridor Plan Update.

Multi-modal and non-motorized needs will continue to be improved along the corridor which include facilities for bicyclists, pedestrians, public transportation and freight mobility. There have been many new improvements for non-motorized use throughout the region by the jurisdictions; bike lanes, trails, and residential pathways along developments to encourage and enhance mobility within the region.

The Highway 41 Corridor Plan integrates land use and transportation plans which sustain community development; build an environmentally sound plan for preserving highway integrity and functions, while enhancing safe local access options; provide off corridor access alternatives which compliment local development; maintain commercial viability; coordinate jurisdictional and public interests; and provide direction for the adjoining jurisdictions in future management of the corridor.

Original SH 41 Corridor Master Plan 2002 ~ HISTORY

The original master corridor plan focused on three scenarios. This update focuses only on the preferred alternative, the "Compact Mixed Use" plan, following the original intent and documentation.

Goals of the original study included:

- Maximize coordination of jurisdictional interests;
- Provide safe corridor circulation alternatives that maximize highway preservation;
- Direct and coordinate development opportunities through access management and policy;
- Protect agricultural /open space areas along the corridor;
- Provide multi-modal facilities along the corridor;
- Provide land use and transportation alternatives that address community values;
- Reduce congestion on Highway 41 and intersecting roadways;
- Minimize impacts to farmland/operations and residential properties;
- Encourage mixed-use development along the corridor;
- Minimize costs to acquire future right-of-way (ROW) and build new road improvements;
- Maximize use of Transportation System Management strategies along the corridor to improve safety and capacity (traffic signal system coordination and access management improvements);
- Protect and preserve natural resources.

Updating of the plan was a cooperative effort in determining changes in land use scenarios and supportive transportation infrastructure. Several efforts have occurred over the years that resulted in agreements between local agencies and the Idaho Transportation Department (ITD) regarding Highway 41. This has led to development occurring primarily at the north and south end of the corridor adjoining both Post Falls and Rathdrum.

The original Plan provided a framework for regional goals, policies, regulations, and development concepts regarding transportation and highway improvements and set in place what at the time was believed to be optimal land use patterns to achieve local goals and policies. This Plan Update expands upon and enhances the existing Plan implemented by City of Post Falls, Kootenai County, City of Rathdrum, ITD, Post Falls Highway District and Lakes Highway District. Key components of this Plan are highway widening; access limitations; secondary access routes; current and future land use patterns along the corridor including mixed use development; pedestrian and

bikeway systems; and, an aesthetic overlay zone with specific requirements for signage, landscaping, the retention and provision of planned open space, and setback standards.

The original SH 41 Master Corridor Plan Study completed in April 2002 can be found on our KMPO website for comparison at: www.kmpo.net/SH41Corridor/Hwy41Corridor Master PlanReduced.pdf

Original Corridor Plan Development

The original corridor transportation and land use plan for the Highway 41 was completed in 2002. The area encompassed SH 41 extending north from I-90 to Lancaster Ave. The Plan provided an overall guide for development in the area. The major issues driving the need to create a cohesive corridor plan included:

- Limiting access along the corridor
- Widening the highway to principal arterial design standards
- Enhancing east-west and north-south street connectivity
- Creating off corridor circulation roadways for local circulation
- Adopting comprehensive land use concepts
- Encouraging the preservation and creation of open space
- Buffering incompatible land uses
- Allowing for mixed land use development through performance zoning
- Providing for a pedestrian / bikeway system
- Establishing standards for aesthetics

Original Selected Land Use Plan

The original plan was a cooperative effort in determining possible land use scenarios and supportive transportation infrastructure. Several efforts occurred over the years that resulted in agreements between the agencies and the Idaho Transportation Department (ITD) regarding Highway 41 have resulted in development occurring primarily at the north and south end of the corridor adjoining both the Post Falls and Rathdrum. Limitation on large-scale development, due to then limited wastewater alternatives, had slowed Prairie development. Farming activities on the Prairie had declined partly due to limitation of field burning and subsequent sales of agricultural land for development. The scope of the project was developed as jurisdictions, the Project Advisory Committee, and the public came to agreement on the preferred alternative.

The original plan showed varying levels of development and spatial arrangements, three land use scenarios had been considered. Land use categories were shown to be consistent throughout the corridor and were similar to existing land use category designations for the cities of Post Falls, Rathdrum, and Kootenai County. The “Compact Mixed Land Use Plan” became the preferred selected scenario at that time.

The Compact Mixed Use Plan – The SH 41 corridor master plan's preferred scenario allowed for a mixed-use overlay of the entire corridor for the provision of mixed uses within all zones. Performance zoning, whereby uses could be mixed within a zone, such as commercial with residential uses, would be allowed for developments that provide clustered developed areas and open space. Increased densities would be allowed in those areas that were offset by these provisions. The Aesthetic Corridor overlay also applies within ¼ mile of Highway 41 and includes requirements for signage, landscaping, the retention and provision of open space, and setback requirements. Overall, the Mixed Use Plan provided for open space areas for the separation of land uses. Specific open space areas were designated adjacent to railroad crossings and concentrated commercial areas. Open pace areas were to be included in future planning processes. The Mixed Use Plan also envisioned the continuation of agricultural uses.

Original Plan ~ The Compact Mixed Use Plan ~ The Preferred Land Use Scenario

Aesthetic Corridor Overlay- Standards would apply within one- quarter mile on each side of Highway 41 for signage, landscaping, site design, and the provision of open space.

Open Space Areas - Open areas for commercial development to provide separation of land uses. Preservation of open space could also be used for agricultural or recreational purposes. Some recreational purposes included; natural areas, public parks, trails, bicycle paths, baseball fields or golf courses. One example of a combined natural open space would be; a subdivision with a ped/bike trail around it.

Mixed Use Overlay - Applied to the entire corridor for the provision of mixed uses within all zones. Performance Zoning allowed for development bonuses (increased density) for clustered development and use of open space within uses and separation of land uses.

This update follows the original intent of the plan using the "Compact Mixed Land Use Plan" as a template and updates the Plan to incorporate the changing demographics, economic, roadway projects and traffic conditions in the area that have occurred since the original study. The subsequent sections only discuss the update to the SH 41 Corridor Master Plan.

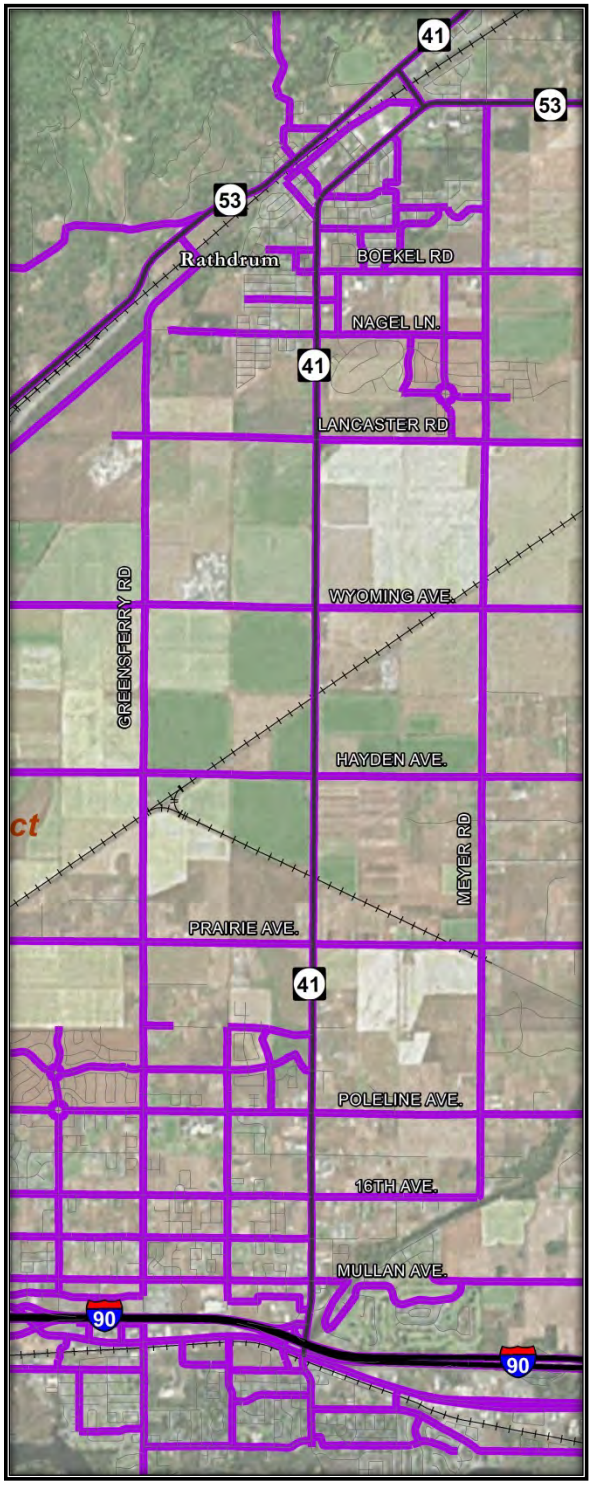
SH 41 Corridor Master Plan ~ Update

Corridor Study Area and Jurisdiction

The Corridor Plan Study area (see Figure 1) has been updated to include the City of Rathdrum, expanding the area north to SH 53. The corridor is bounded by Interstate 90 (I-90) on the south, SH 53 to the north, Greensferry Rd. to the west and Meyer Rd. to the east. The area incorporates the entire SH 41 corridor from I-90 to the SH 41/53 junction east of the city of Rathdrum. The area is approximately 7.9 miles in length, connecting the Cities of Post Falls and Rathdrum, with agricultural uses still being practiced within the corridor. Both communities' Areas of City Impact (ACI) are within the study area, with a small portion of unincorporated Kootenai County located in the middle.

Portions of the SH 41 corridor have multiple jurisdictions that work together within the areas. In the rural areas, (outside of the ACI's) these areas are considered shared tier areas. For example, in the area between the City of Post Falls and the City of Rathdrum, Kootenai County is the governing jurisdiction, but it is also a portion of the Post Falls Highway District. This area has shared jurisdictional control and multiple agencies work together. Also, at the far northern corner of the corridor, Lakes Highway District shares in jurisdictional authority for those portions that are not a part of the City of Rathdrum's ACI.

Figure 1 - SH 41 Corridor Area



Source: Google Maps - Not to Scale

Population Growth

Population has continued grow and change in character within Kootenai County over the last ten years. This is evidenced by the data from the US Census Bureau decennial data. Overall growth of the urban area cities grew a total of 18.61% from 2000 to 2010. Each jurisdiction has grown at different rates. During the past ten years there has been an Average annual growth rate of 4.801% in the City of Post Falls, 3.549% per year in the City of Rathdrum and 2.40% per year overall within the county itself. The growth rates reflect the Average annual percentage of growth based on the ten years of decennial data from the US Census Bureau (2000 to 2010).

The population growth was calculated based on the historical data from the 2000 US Census Bureau and compared to the 2010 census data, as well as comparing it to the previous data from 1990 to 2000. The population and dwelling units (housing) for each jurisdiction grows at different rates. The following page depicts the historical growth and the estimates of future growth. Future growth is updated every decennial census year with the next decennial census year being the year 2020. In between decennial census years, growth rates and actual growth are estimated based on historical growth, employment data and building permits, which are then used to check and adjust if necessary at the next decennial census.

Table 1 – SH-41 Corridor Growth Projections

KMPO 2010/2014/2035 FUTURE GROWTH PROJECTIONS

			2010		Historic Annual Growth Rates				PROPOSED	2014			Total Increase 2010-2014	PROPOSED	2035			Total Increase 2010-2035		
Jurisdiction	1990 Census Population	2000 Census Population	(1) 2010 Census Population	2010 Census Occupied TOTAL Housing	(6) 2010 Est. Avg. Persons per Household (PPH) Occupied	(2) Total Dwelling Units (Occupied)	POP % of County	Total Percentage Change in Growth 2000-2010 Census	(3) Average Annual Growth Rates Proposed for Model Projections	(4) Total Population	(5) Total Dwelling Units	POP % of County	Pop'n Increase	(3) Average Annual Growth Rates Proposed for Model Projections	(4) Total POP	(5) Total Dwelling Units	POP % of County	Pop'n Increase	TOTAL NEW Dwelling Units	NEW Dwelling Units Total % of County Growth
Cities (Incorporated areas Only in 2010 data - ACI's are included in 2035 projections)																				
Huetter (Incld w/Post Falls)	82	96	100	42	2.38	42	0.07%	4.17%	0.409%	102	43	0.1%	2	0.409%	111	47	0.0%	11	5	0.0%
Post Falls	7,249	17,247	27,574	10,263	2.69	10,263	19.91%	59.88%	4.801%	33,263	12,380	21.8%	5689	4.801%	89,050	33,144	32.6%	61,476	22,881	43.8%
Rathdrum	2,000	4,816	6,826	2,427	2.81	2,427	4.93%	41.74%	3.549%	7,848	2,790	5.1%	1022	3.549%	16,324	5,804	6.0%	9,498	3,377	6.5%
Unincorporated County (Outside of Incorporated areas)																				
Post Falls Highway District			10,844	4,135	2.62	4,139			0.217%	10,939	4,175		94	0.217%	11,448	4,369		604	230	0.4%
Lakes Highway District			18,704	6,902	2.71	6,902			0.363%	18,977	7,003		273	0.363%	20,478	7,556		1,773	654	1.3%
Note: County will do TAZ distribution for areas outside the ACI's. Distribution may differ from highway district totals above, however total unincorporated county values should match this table.								AVERAGE	0.255%					0.794%						
Kootenai County Total	69,795	108,685	138,494	54,200	2.52	54,195		26.84%	2.40%	152,716	59,731		14,219	2.400%	273,566	106,464		135,072	52,269	100%

NOTES:
PPH = Persons per Household

2.30 w/11% surplus housing (2.4 - 0.11)
2.41 Urban Average
2.52 overall Kootenai PPH (as reported by US Census Bureau)

(1) 2010 population based on us Census Bureau Dicennial Census Data.

(2) Dwelling Units based on PPH combined average of occupied single and multi-family units from US Census Bureau Records for 2010.

(3) Anticipated Average Annual Growth Rates were updated in 2010, Based on Historical growth rate from 2010 US Census Bureau Data, from 2000 to 2010.

(4) 2035 Population Projections were based on the 2010 US Census Bureau population compounded annually using Projections*, over 25 years.

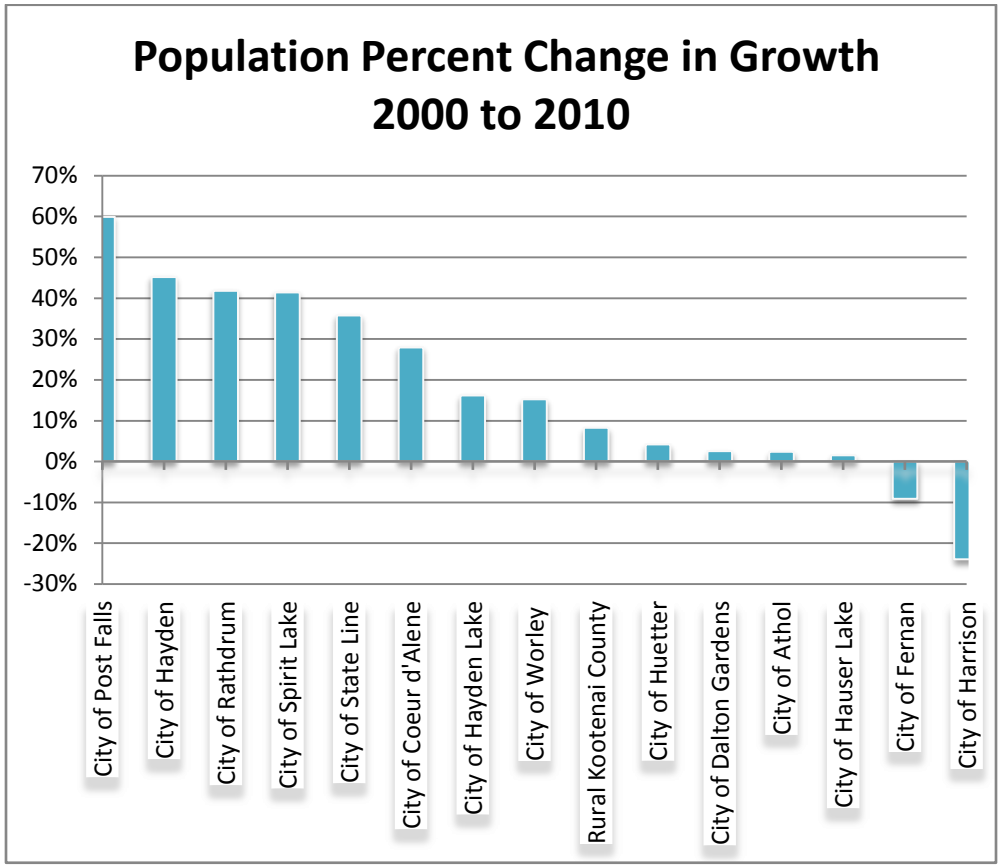
(5) 2020 & 2035 Dwelling units were calculated by dividing 2035 projected population by average (PPH) household size from US Census Bureau 2010 (Direct calculation 2010 Pop/Total # Occupied Dwelling Units)

(6) Persons per household, calculated for cities by dividing the known Population by the known occupied housing units (Population/Occupied Dwelling Units).

(7) Estimate from Alivia Metts, Regional Economist, IMPLAN Janurary 6, 2012.
Note: Unincorportaed area totals determined by using Kootenai County Structure (dwelling units) file and Highway District Boundaries in GIS.

Within Kootenai County, the total percent change in jurisdictional growth from the year 2000 to 2010 increased in nearly all of the jurisdictions, showing population growth varying depending on the jurisdiction. The Average percentage of change in growth population was between -23.97% for the City of Harrison, to +59.88% for the City of Post Falls over the course of the past 10 years. In chronological order (highest to lowest), the jurisdictions Average percentage of change over the 10 year period was as follows: Post Falls +59.88%, Hayden +45.15%, Rathdrum +41.74%, Spirit Lake +41.35%, State Line +35.71%, Coeur d'Alene +27.88%, Hayden Lake + 16.19%, Worley +15.25%, Rural Area Kootenai County +8.22%, Huetter + 4.17%, Dalton Gardens +2.50%, Athol +2.37%, Hauser Lake 1.50%, Fernan -9.14%, and Harrison – 23.97%, shown in the chart below:

Figure 2 - Population Percent Change in Growth 2000 - 2010



The growth rate declined slightly in some areas based on local realtor and building permit data.

Population data is obtained through the US Census Bureau, decennially (every ten years), in between years, the MPO estimates the population growth based on the annual percentage of growth that has occurred and is projected into the future, compounded annually, until the next decennial census is completed. Anticipated population growth for the county and the cities within the SH 41 corridor are as follows:

Table 2 - Cities Population for the Corridor & Forecast Growth

CITY	2010 POPULATION	2014 POPULATION	2020 POPULATION	2035 POPULATION	HISTORICAL AVERAGE ANNUAL % GROWTH
KOOTENAI COUNTY TOTAL	138,494	152,716	178,280	273,566	2.40%
City of RATHDRUM	6,826	7,848	9,674	16,324	3.55%
City of POST FALLS	27,574	33,263	44,071	89,050	4.80%

Public Involvement


SH 41 CORRIDOR MASTER PLAN UPDATE

PUBLIC COMMENT PERIOD
August 10th to September 9th, 2016

Kootenai Metropolitan Planning Organization
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Coeur d'Alene, Idaho 83814 Phone: 208-930-4164


SH 41 CORRIDOR MASTER PLAN UPDATE

Response Summary to the
PUBLIC COMMENT PERIOD
August 10th to September 9th, 2016

Kootenai Metropolitan Planning Organization
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CHAPTER 2 – LAND USE & TRANSPORTATION

Agencies & Jurisdiction Existing Comprehensive Plans and Zoning

Each jurisdiction has their own adopted Comprehensive Plans and Zoning Ordinances. In general, the comprehensive plans and zoning applicable to the Highway 41 corridor designates a majority of the land for future retail, commercial and residential development, some agricultural land slated for rural or transitional purposes. Commercial development is primarily located adjacent to Highway 41 within the cities of Post Falls and Rathdrum, with residential land uses planned for those areas extending east and west of the commercial areas.

While development regulations within each jurisdictions zoning codes are not consistent with each other, comprehensive plans generally indicate similar development plans for residential, commercial, and agricultural/transitional lands.

All agencies support and emphasize the need to protect the Rathdrum Prairie Aquifer as a sole source aquifer. Equally important on the Rathdrum Prairie is the desire for retention of open space. Open space designation can be used for passive (natural vegetation areas), active (golf courses), or agricultural uses. Open space can also be viewed as building setback areas and landscaping within a project. Quality of life issues have become central theme within planning efforts and are expected to drive future planning on the Prairie.

Within the SH 41 corridor, there are five jurisdictional authorities that are directly affected by growth and development anticipated in the comprehensive plans; Idaho Transportation Department, the City of Post Falls, the City of Rathdrum, Kootenai County and Post Falls Highway District, and Lakes Highway District.

Jurisdictions within the corridor and their applicable development plans will influence how development will occur and how transportation in the corridor will be accommodated. They are:

Idaho Transportation Department:

The Idaho Transportation Department is the governing authority for all state routes in Kootenai County. District 1 encompasses the five northern counties; Benewah, Bonner, Boundary, Kootenai and Shoshone and covers a land area of 7,652 square miles. ITD is responsible for project development, funding, transportation, planning in coordination with KMPO, contracting, construction/materials, environmental, right-of-way, highway safety, bridge, design/traffic and maintenance operations.

The ITD owns SH 41 and the associated right of way; however, while the do have highway access permit authority to the State highway, they do not have land use control authority that can have an impact on traffic growth and congestion. They are typically a stakeholder in the development of the local jurisdictions comprehensive land use plan. You can find additional information on their website at: www.itd.idaho.gov/projects/D1/index.html

Kootenai County:

Kootenai County has land use decision-making authority in unincorporated areas of the County. They also provide law enforcement, judicial systems, jail and juvenile detention facilities, adult and juvenile probation, 9-1-1 service, ambulance service, a regional airport, emergency management, noxious weed control, parks and recreation (including bicycling, boating, and snowmobile facilities), as well as cultural and historical support. The county also provides general services such as planning and zoning, code enforcement, driver and vehicle licensing, managing federal, state, and local elections, recording of deeds and legal documents, transit operation oversight and administration, and administration of the property tax system.

Therefore while Kootenai County does not own public roads in the corridor, they are responsible for traffic and traffic patterns generated as a result of land use plans and development approval for the outlying sections of land within the corridor, outside of the City of Post Falls and the City of Rathdrum Area of City Impact (ACI's). Kootenai County works in cooperation and coordination with the cities, highway districts and Idaho Transportation Department. Kootenai County has their own Comprehensive Plan which was adopted on December 30, 2010, see Figure 4 and it can also be found online at: www.kcgov.us/departments/planning/newcompplan.asp

Kootenai County recently revised their Land Use and Development Code. More information can be found online at: www.kcgov.us/

The City of Post Falls:

The City of Post Falls staff and the planning and engineering departments have been very proactive in working with the community, along with other jurisdictions, in providing a community focused approach to identifying priorities.

The city adopted a Strategic Plan in February, 2013 that encompasses 2013 – 2017. The plan focuses on six key areas; (1) Quality of life, (2) City infrastructure, (3) Planning/Land Use, (4) Environment, (5) Economic Development and (6) Fiscal responsibility, it also includes implementation strategies and departmental projects that will help the City reach the stated goals and objectives. The Strategic plan encompasses the "We Value" concept and can be found online at http://www.postfallsidaho.org/StrategicPlan/StratData/StrategicPlanFinal.pdf

The City of Post Falls also has a Transportation Master Plan (TMP) completed in May 2004. The City is currently in the process of updating the Plan. The TMP guides the management of existing transportation facilities and the design and implementation of future facilities for the next 20 years. Their overall goal is to develop a transportation system that enhances the livability of Post Falls and accommodates growth and development through careful planning and management of existing and future transportation facilities. The TMP can be found at: http://www.postfallsidaho.org/PZDept/pzforms/Planning/TransportationMasterPlan2004.pdf

The City of Post Falls is also in the process of updating the 2010 Comprehensive Plan and revised zoning ordinance (to be consistent with the revised Comprehensive Plan), tentatively scheduled for June 1, 2017. Their current land use zoning plan within the corridor is shown in Figure 5. More information on the process can be found at: http://www.postfallsidaho.org/psplanning.html

They also have a City Center Plan completed in July 2005 which addresses the city's seven goals for the community; (1) Promote a Distinct Post Falls Identity, (2) Reconnect with Post falls History and Heritage, (3) Capitalize on Natural Character, (4) Make Pedestrian Friendly Connections, (5) Create and Strengthen City Center Attractions, (6) Promote a Vibrant Mix of Infill Developments and Uses, (7) Improve Transportation Choice. This document can be found online at:
http://www.postfallsidaho.org/PZDept/pzforms/Planning/CityCenterPlanComplete.pdf

The City of Rathdrum:

The City of Rathdrum continues to make great strides in guiding the community's growth and development. In 2014 the City updated their Comprehensive Plan defining a general vision for the City of Rathdrum's long term future. The plan reflects goals of the community and sets policies to obtain their goals. The City of Rathdrum's zoning map is shown in Figure 8. The document can be found online at: http://www.rathdrum.org/vertical/sites/%7BB217A04D-FA9D-403A-9D25-24962991B1D9%7D/uploads/2014_Comp_Plan_Composite.pdf

Highway Districts:

There are two highway districts that govern many of the key access roads within the SH 41corridor. Post Falls Highway District encompasses the majority of the SH 41 corridor, while Lakes Highway District has an area at the junction of SH41/SH 53. Lakes Highway District is the upper right corner of the corridor map, from Lancaster north along the east ½ mile backage road to the north. A map (See Figure 3) has been included showing the highway district boundaries within the corridor.

POST FALLS HIGHWAY DISTRICT (PFHD) is a public entity responsible for the maintenance and construction of secondary roads in the northwest portion of Kootenai County. The District is administered by a three-member Board of Commissioners. Post Falls Highway District is divided into three sub-districts, and each sub-district is represented by an elected Commissioner. PFHD was formed in May of 1971, encompasses an area of 130

square miles and maintains 186.65 miles of roadway within their district. For more information their website can be found online at: http://www.postfallshd.com/about.html

LAKES HIGHWAY DISTRICT (LHD) maintains secondary public roads in the Bayview, Dalton, Hayden, Hayden Lake, Avondale, Twin Lakes and Spirit Lake areas in Kootenai County. The District Boundaries generally lay north of Best Ave. in Coeur d'Alene up to the Bonner County line, east of State Highway 41 and north of the Rathdrum City Limits. LHD completed their first Transportation Plan in November 2014. This Transportation Plan was developed in accordance with the guidelines developed by the Local Highway Technical Assistance Council (LHTAC) and consistent with the KMPO Metropolitan Transportation Plan (MTP). The Plan covers six categories: (1) Public Involvement Process, (2) Review of Demo- graphics/Employment/Land Use, (3) Review of Existing Plans, (4) Inventory of Existing Transportation Network & Facilities, (5) A Traffic & Safety Analysis, (6) Capital Improvement & Implementation Plan. The document can be found online at: http://www.lakeshighwaydistrict.com/portals/0/Transportation%20Plan%20COMPLETE_FINAL.pdf

Figure 3 - Highway Districts within the Corridor

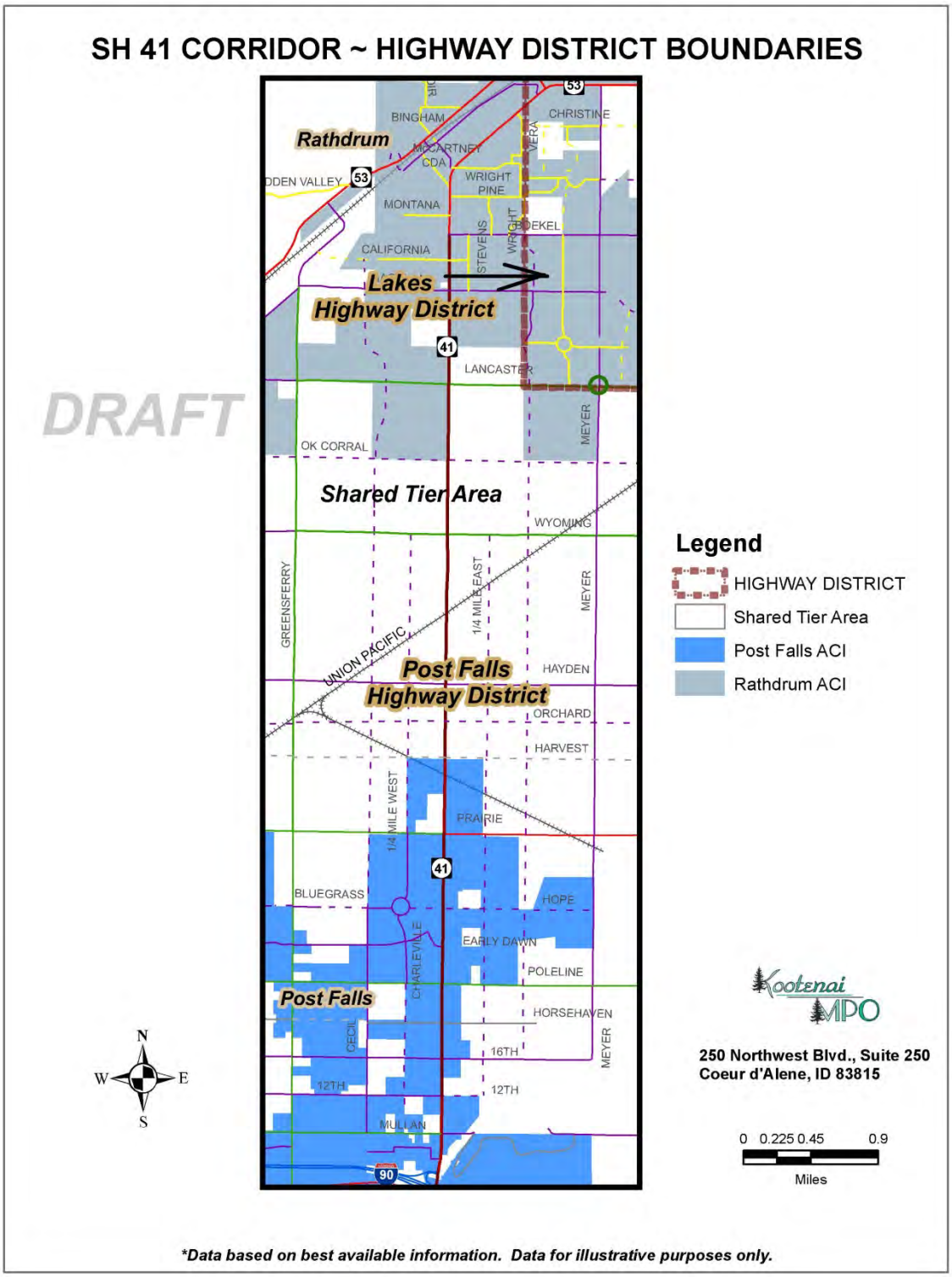


Figure 4 - Kootenai County Partial Comprehensive Plan

Kootenai County Partial Comprehensive Plan, Amended December 30, 2010:

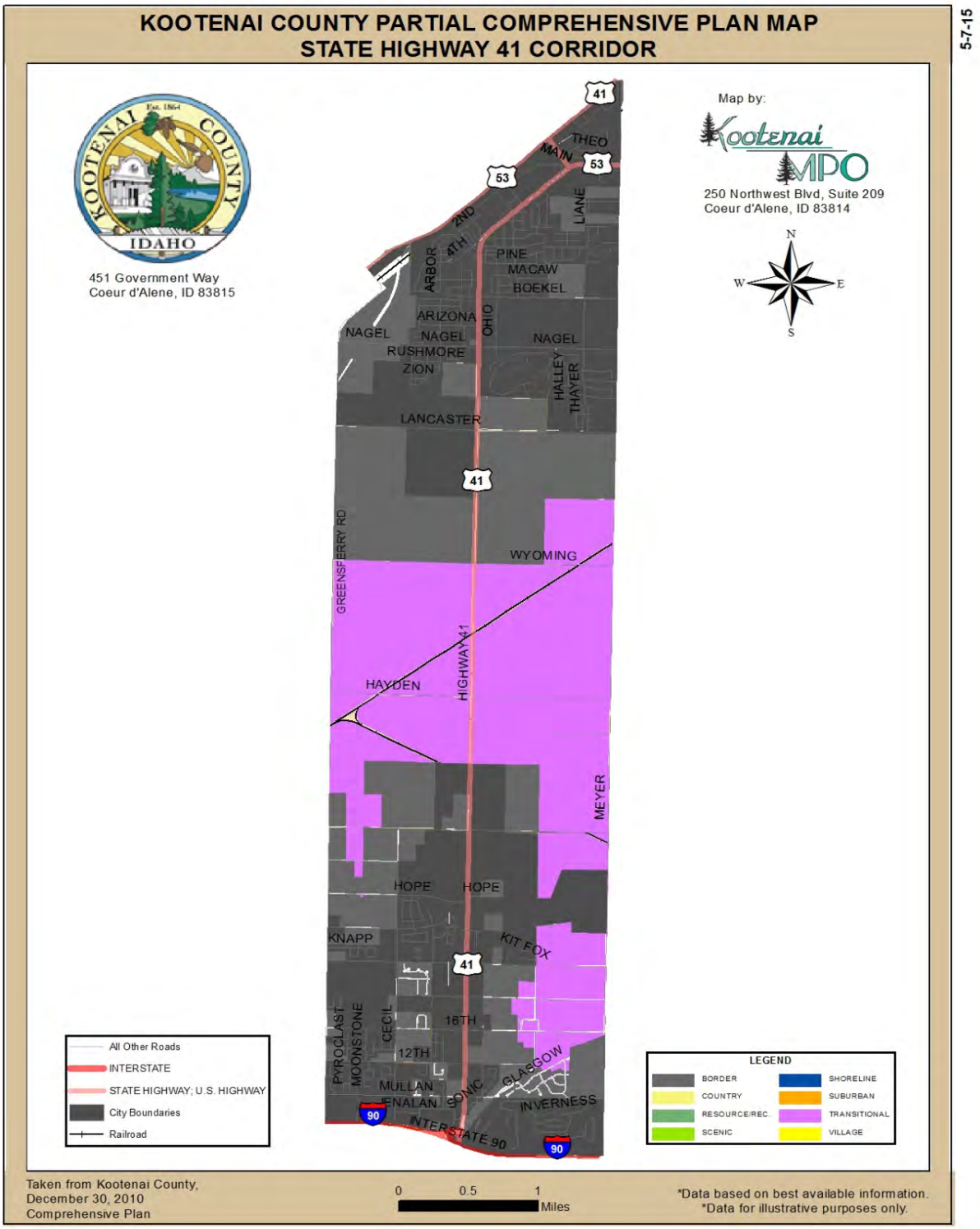
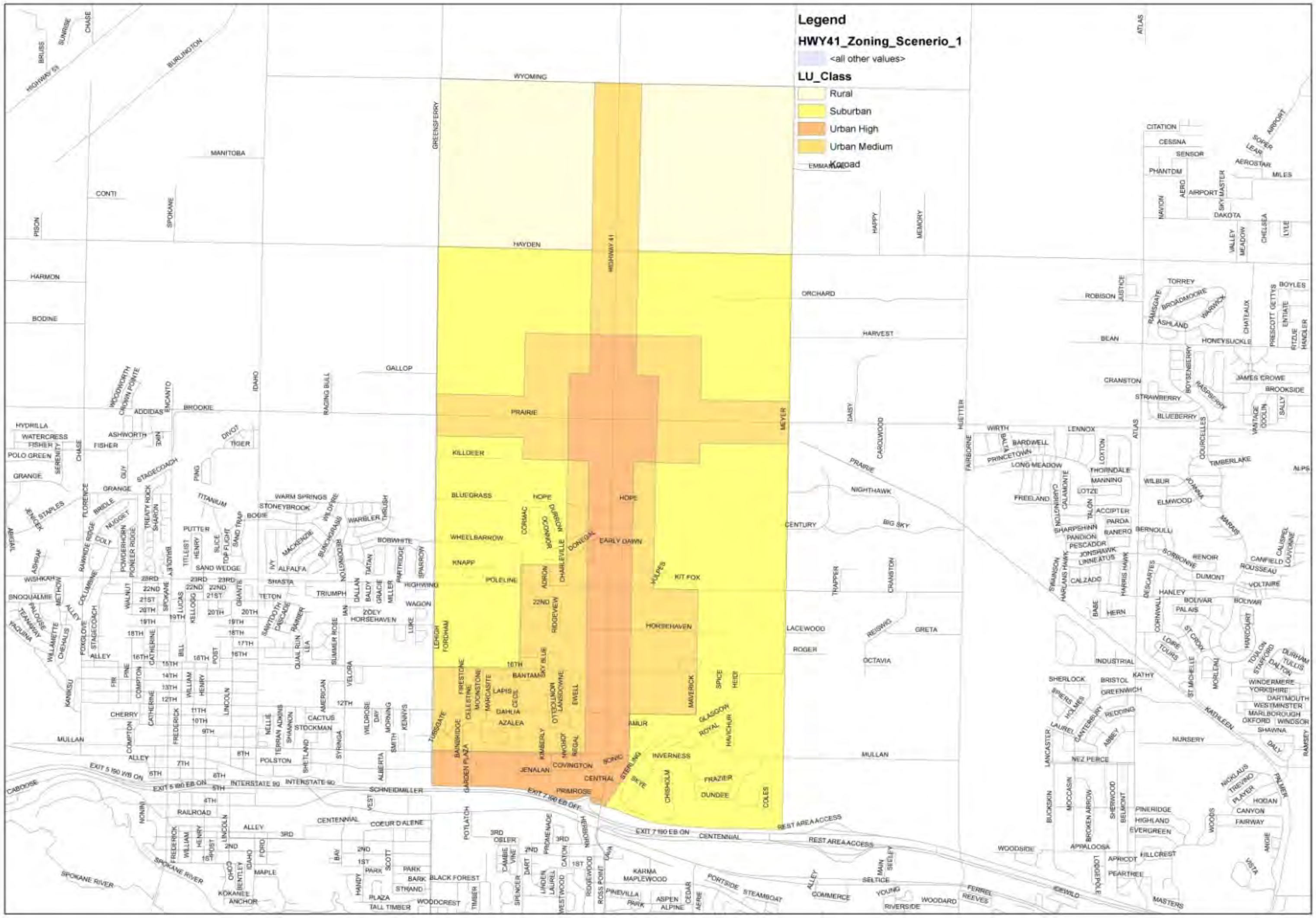


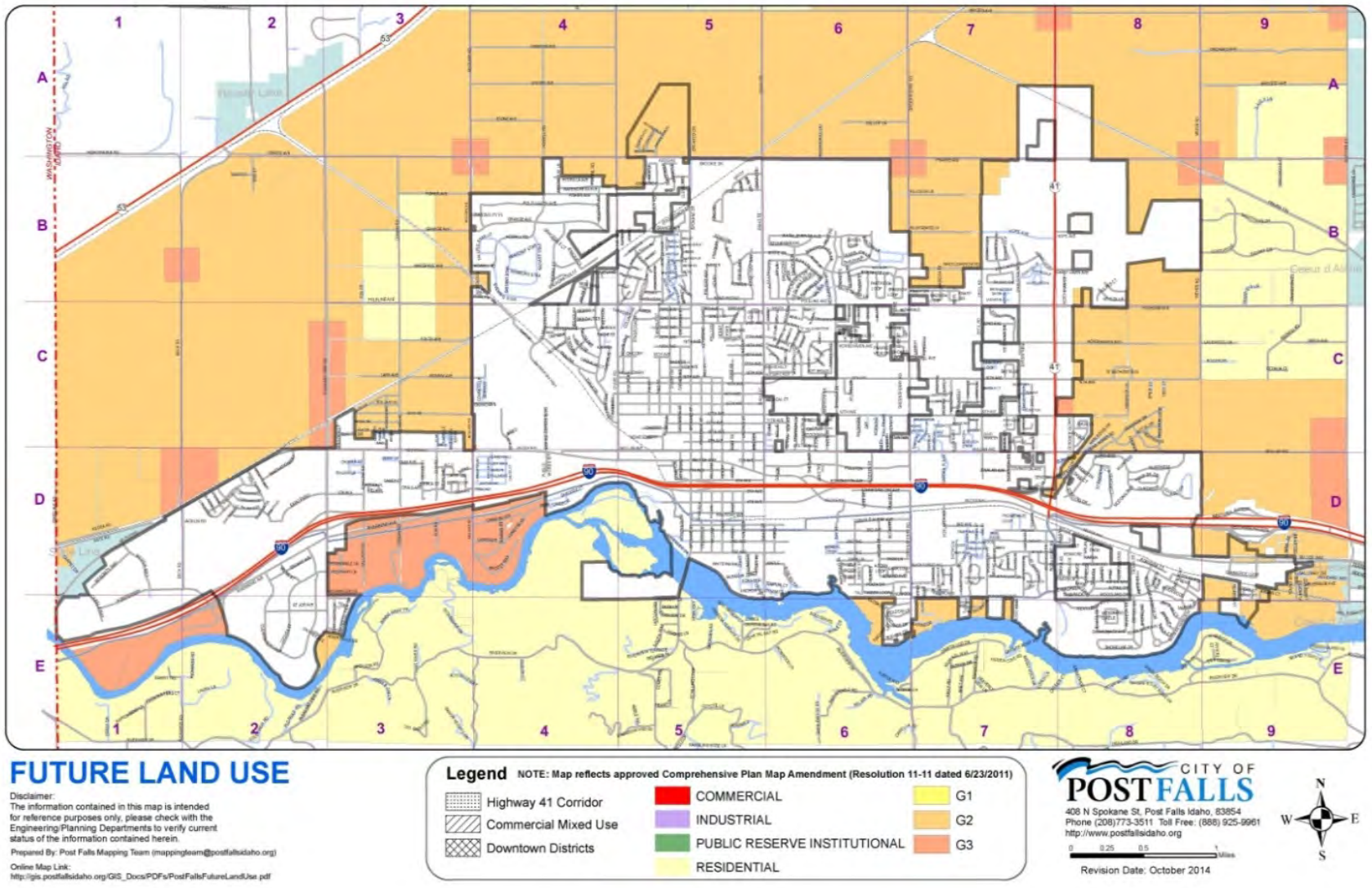
Figure 5 - City of Post Falls Current Land Use Zoning



City of Post Falls Future Land Use:

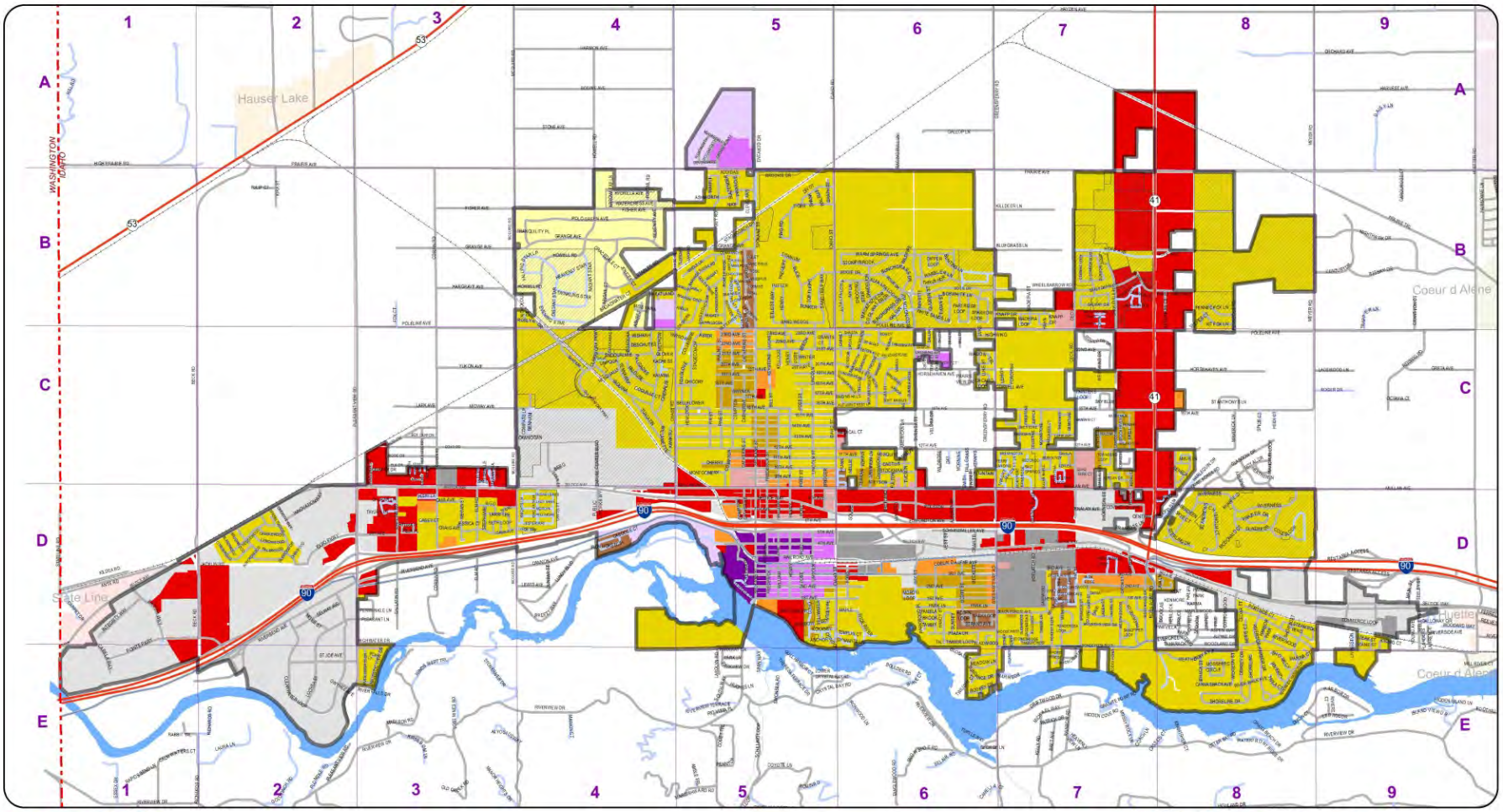
The City of Post Falls updated their Comprehensive Plan in 2010. Since 2000 the city has seen a great deal of health-care related development. Post Falls uses two Land Use Maps. The first map is the Future Land Use Plan Map; providing general guidance for the application of conventional zoning designations and zoning activities. The second map is the Zoning Map; providing specific guidance for the application as SmartCode zones and Smart code operations. The maps indicate the desired mix of land uses and intensities that will foster the community's goals as expressed in the comprehensive plan. The land use recommendations in their plan emphasize the importance of land use planning and cooperation among the various jurisdictions and agencies in the area. The City of Post Falls zoning and land use is currently transitioning to mixed use; commercial/residential uses (See Figures 6 & 7).

Figure 6 City of Post Falls Future Land Use Map



City of Post Falls Future Land Use Plan – October 2014

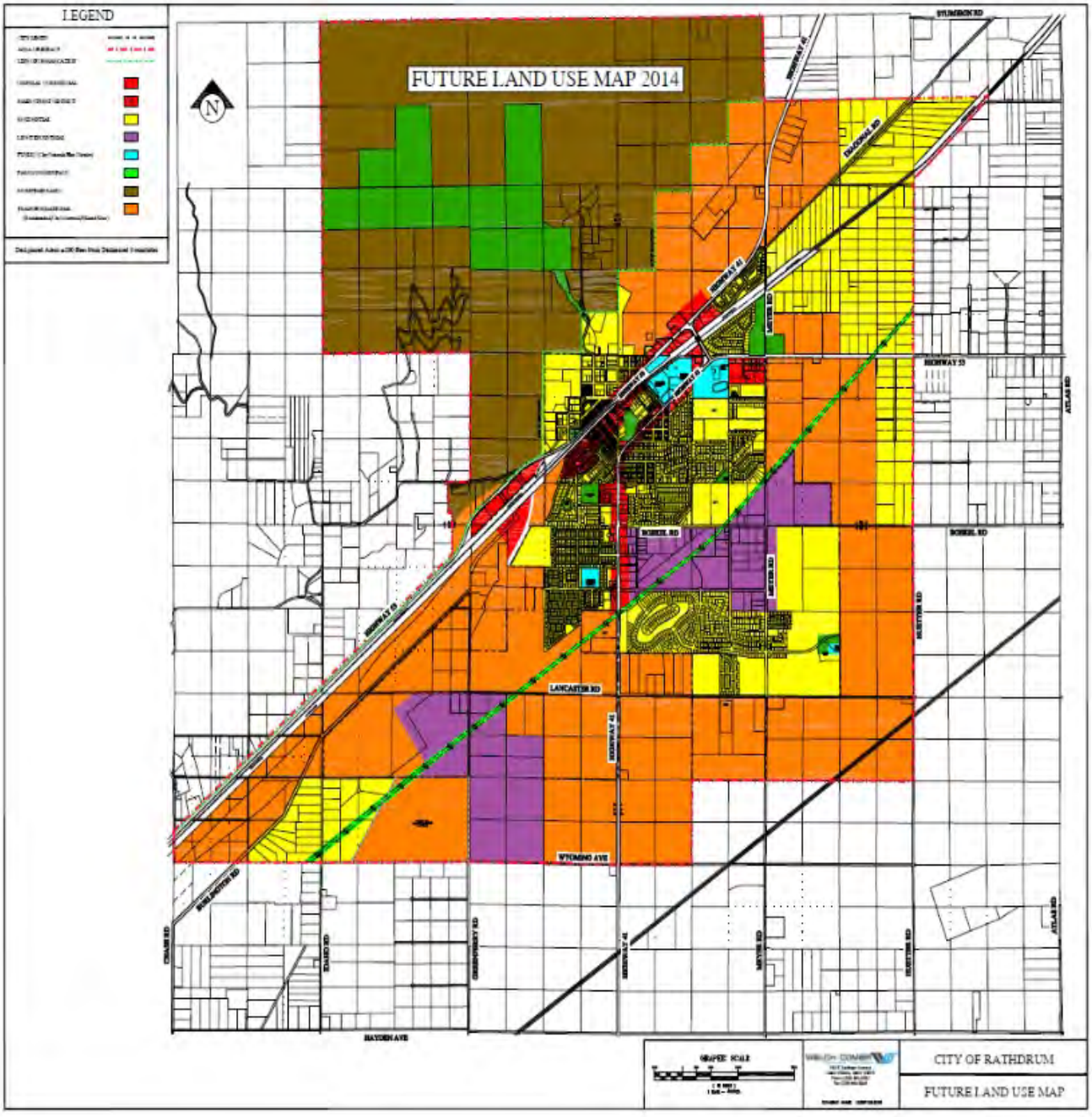
Figure 7 City of Post Falls Zoning Map - City of Post Falls Zoning Map – November 2014



City of Rathdrum Future Land Use Map:

The City of Rathdrum updated their Comprehensive Plan in 2014 which includes future land use maps. The plan includes goals and policies with five important concepts addressing: Small town atmosphere; balanced development; central community core district; open space/natural environment and interconnectivity.

Figure 8 - City of Rathdrum Future Land Use Map



City of Rathdrum Future Land Use Plan – 2014

Development Trends

During recent years, pressure for commercial development along Highway 41 has increased primarily along the corridor from Greensferry Rd. to the Highway 41 corridor and along Highway 41 from I-90 north to Prairie Ave. Commercial activity is expected to continue to occur north of Prairie Ave. to Harvest Ave. The rural area from Hayden Ave. north to the City of Rathdrum is expected to continue to grow with single family residential development, while current agricultural land and open space areas seeing transitional activities.

Little commercial activity has occurred north of Prairie Ave. due to lack of public utilities primarily public wastewater service into the unincorporated areas of the County. Recent residential development has occurred in both Post Falls and Rathdrum and within their respective Areas of City Impact, primarily to the west of Highway 41. Existing land use is generally concentrated along roadways with large tracts of undeveloped or transitional farm land within the center of the sections.

Other developments within the corridor study area include commercial/industrial uses adjacent to I-90 and south of Mullan Ave. with growing commercial development along Highway 41, redevelopment of residential uses along the highway, Subdivision developments that include: Radiant Lake, Prairie Sky and Golden Spike Estates within Rathdrum. Within the Post Falls area, some of the larger housing developments include the Tullamore, Montrose, Foxtail and the Vineyard subdivisions.

Majestic Park, City of Rathdrum, Spring 2015

Tullamore Housing Development, City of Post Falls, Spring 2015

Given current development activities, the Cities of Post Falls and Rathdrum are expected to continue grow toward each other. It is anticipated that increases in retail, high tech manufacturing, and industrial employment will support these trends, with resultant traffic increases occurring within the study area.

The City of Rathdrum is seeing residential growth expanding to the Southeast portion of the Rathdrum Prairie where the Kootenai Technical Education Campus (K-Tec) educational facility and North Idaho College Career Technical Educational Campus on 40 acres are located on Lancaster Road at Meyer Road.

K-Tec was estimated to have 350 students in 2014 with 403 projected students in 2020 and 576 students in 2035. North Idaho College (NIC) next door to the K-Tec facility is expected to have student enrollment at 170 in 2016, 256 in 2020, and 365 students in 2035.

K-Tec Campus, City of Rathdrum, Spring 2015

A new City of Post Falls road project, the Greensferry Overpass was completed in the fall of 2015. The Greensferry Overpass was a $15-17 million design-build project funded by the Post Falls Urban Renewal Agency (URA). The new structures features two travel lanes, a center turn lane, bicycle lanes, and a sidewalk on the west side that connects to the Centennial Trail. The project improves connectivity, traffic

mobility, and emergency response between the business districts and residential areas north and south of the Interstate.

Greensferry Rd. Overpass Completed in 2015

LAND USE DEVELOPMENT CONCEPTS

Urban Residential Land Use

Areas are intended to provide the opportunity for development of an environment, which includes a variety of land uses, residential densities, public services, and facilities. Urban residential areas are primarily a residential category of single-, two- (duplex), and multi-family development integrated with neighborhood commercial, public, and recreational uses. Agricultural uses will be considered secondary and will be very limited. Open spaces will most likely consist of parks and school grounds, but can include passive recreational open spaces and land application of wastewater treatment. Low-to-moderate levels of noise will exist in urban areas due to the intensity of activities and the volume of traffic generated. Higher density residential uses (multi-family) will be located near arterial and collector streets. Multi- family structures may be a transitional use between commercial and single-family developments.

Suburban Residential Land Use

This category is intended to provide the opportunity for development of residential, agriculture, and open space in a "country-like" setting. The typical land use mix found in rural areas includes agriculture, grazing, large lot single-family residential development, and large unique or environmentally sensitive lands. The aesthetic setting of this land use category will be open space, large cultivated fields, pastures, and natural areas. Few public services will be provided in these areas and most homes will be served by private water systems (wells) and on-site sewage disposal systems (septic tanks and drain fields). Commercial, retail, and industrial development could be allowed with appropriate controls.

Currently, within the SH 41 corridor single-family housing units fall under the required 5 acre minimum unless the lots are connected to a municipal water reclamation system. The water system cannot exceed the maximum number of persons per household. Clustered housing can occur within the suburban residential land use.

Agricultural Land Uses

The agricultural land use category is intended to provide a means to protect land primarily for agricultural uses and to identify lands presently farmed or can potentially be farmed as a source of income. The predominant use of land within this category will be cultivation, grazing, animal husbandry, horticulture, and agriculturally related commercial activities. The aesthetic setting of agricultural areas is open space, large cultivated fields, pastures, and natural areas. Commercial and industrial uses may occur in agricultural areas when they are associated with agriculture. Homes will be served by private water systems (wells) and on-site sewage disposal systems (septic tanks and drain fields).

Commercial Land Use

The commercial category is intended to provide the opportunity for development of commercial uses directly related to major throughways, specifically community and regional shopping and retail uses. Residential use in commercial areas is not intended to be a high priority but may be considered compatible through the use of proper screening and performance standards. Consumer goods offered in strip development frequently differ from those found in shopping centers. Commercial areas feature high-intensity uses that produce high automobile traffic. Related congestion problems with this traffic may create air quality problems, especially along strip commercial development.

Most commercial development is on flat land with low building profiles. Paved parking, streets, and man-made structures will dominate the site with few natural features to be found. Well defined corridor setbacks, landscaping, screening, lighting, signage, and other architectural treatments will be necessary to provide aesthetically pleasing developments. Aesthetic architectural treatment of new development

should be characterized by design, which eliminates or minimizes signage clutter, includes well maintained landscaping that screens exterior storage and parking areas, and includes sufficient setbacks.

Land use development concepts should foster improved land use compatibility with adjacent non-commercial uses, support existing uses, and attract new viable commercial development. Commercial areas require a full range of public services including sanitary sewer, stormwater treatment, public water systems, and underground utilities such as telephone, electricity, and gas.

Industrial Land Use

The Industrial zone permits light industrial uses such as warehousing, assembly, processing and light manufacturing as permitted uses and conditionally allows heavy industrial uses such as fabrication, manufacturing, refining and processes that produce external effects such as noise, emissions, outside activities. The industrial zone is applied in areas designated suitable for industrial development in the jurisdictions Comprehensive Plan.

Neighborhood Centers

A Neighborhood Center is intended for concentrated mixed-use development in a suburban location. This sub-regional center will provide a mix of land uses that will bring jobs, shopping, and cultural activities closer to where people live. The type of uses includes retail sales, services, government and business offices, recreational facilities, higher-density residential development, and other uses to serve the needs of the surrounding population.

Community Design

Elements that threaten the aesthetic quality of the Prairie include scattered, large lot subdivisions, power line easements, sign clutter, loss of agricultural pursuits, and highway strip commercial development. There is a strong public desire to preserve the visual open space and slopes within the corridor study areas. Adoption and implementation of an Aesthetic Corridor Overlay can provide an overall umbrella for design standards, while still maintaining individual development style. The corridor also serves as an entryway to the Cities of Rathdrum, Post Falls, and to the Rathdrum Prairie. As such, use of controls within these areas serves to provide standards for other development.

Mixed land use design to aid in the walkability within a mile and a half of a central area, have become popular in the last decade, for example; combining retail on the main floor with condo apartments or business offices above. Non-motorized mode design has also increased in popularity for travel and recreation within the community.

In-fill Development

In-fill development provides an economic tool for revitalizing underutilized areas of the community. In-fill development is the process of developing or redeveloping vacant or underutilized parcels of land within existing developed areas that are already provided with public services and utilities. In-fill development helps to reduce the cost for extension of public service and utilities.

Aesthetic Corridor

An aesthetic corridor is intended to protect the visual appeal along Highway 41. The corridor would be an overlay zone with standards that would apply within one-quarter mile of Highway 41. Aesthetic corridors provide special design standards for visual appearance (including signage, landscaping, site design, and the provision of open space) along the major transportation route to help maintain and enhance a quality image of the Rathdrum Prairie and associated cities.

Open Space

Equally important on the Rathdrum Prairie is the desire for open space. Open space designation can be used for passive (natural vegetation areas), active (golf courses), or agricultural uses. Open space can be viewed as building set-back areas and landscaping a project. Quality of life issues have become central theme with planning efforts and will continue to drive future planning within the Rathdrum Prairie. The desired balance of open space in contrast to development depends upon the requirements of the particular jurisdiction.

Open space area are intended to retain and provide for a system of natural areas, land application of wastewater treatment, and parks through non-motorized linkages. The open space may be used for outdoor recreation ranging from unobtrusive nature trails and bicycle paths to baseball fields, golf courses, or agricultural uses. Open space can be designated adjacent to railroad crossings, around mining uses, and commercial development to provide separation of land uses. Open space is typically included in larger residential and commercial developments and incorporated into site design and maintenance. Open space areas are generally planned and governed by the jurisdictions with land use control authority, and integrated based upon accepted zoning ordinances and comprehensive plans.

Urban Design Guidelines

Design guidelines can also be establish for the corridor, to regulate the design and quality of commercial development through implementation of specific signage, landscaping, building design and bulk, exterior site, and building lighting controls.

Transfer/Purchase of Development Rights

The transfer or purchase of development rights is a technique to preserve open space. These programs allow development rights to be either sold by one property owner to another or transfer from one property to another where development can be built at a higher density.

New Housing Concepts

New design ideas and housing solutions can be established for efficient utilization of land, the provision of utilities, and reduction of sprawl. Techniques may include clustered development, zero lot-line development, accessory units, infill housing, and small lot development. Applying design guidelines to these new housing types can help insure that they are compatible with their neighbors and maintain high design quality.

Clustered Housing Ordinances

Clustered housing opportunities are used as a way to provide greater flexibility and better site planning, primarily for residential development. These types of developments are particularly successful in rural areas.

Transportation / Traffic Development Impact Fees

Impact fees are assessed on new development by local jurisdictions to assist in funding off-site public improvements/facilities made necessary by new development. Impact fees are established according to Idaho Code and provide the ability to address local future needs based on established plans and service levels.

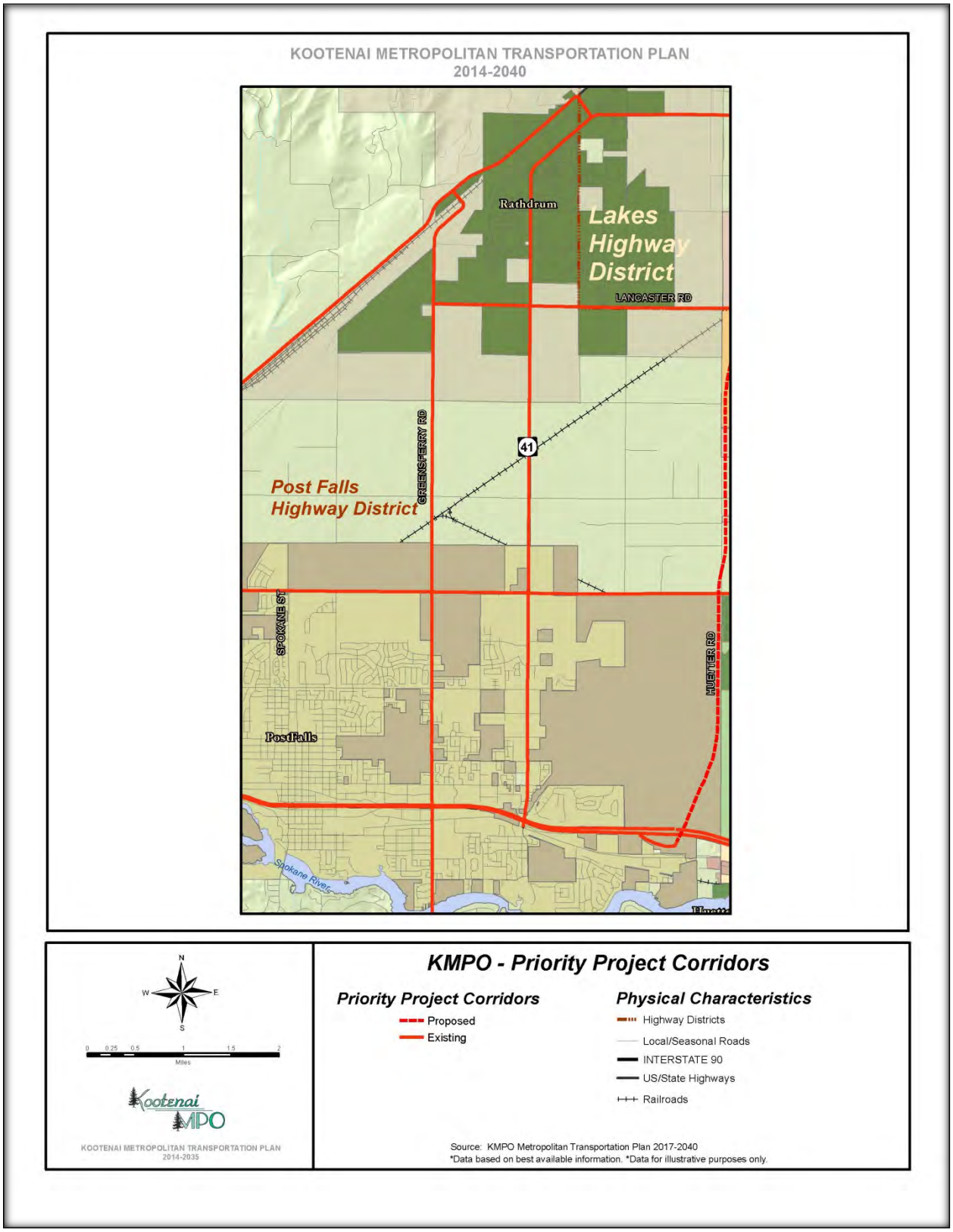
Priority Corridors

The greatest public benefit from transportation investments can be most realized if agencies work together to develop cross-jurisdictional corridors. Using this approach, congestion problems may be curtailed and significant accomplishments in regional mobility can be realized over time despite funding limitations.

KMPO identified SH 41 and Greensferry Road in the Metropolitan Transportation Plan (2010) as two of the priority north/south transportation corridors, as well as I-90, Lancaster Ave., Prairie Ave., and SH 53,

as east/west corridors where Federal-aid funding for *major* capacity improvements (examples; additional lanes, new roadways, double lane roundabout, etc.) should be focused over the next 20 years. This strategy does not preclude the use of Federal-aid funding for the other complimentary roadways in the network, nor is it meant to imply that only those roads will receive capacity improvements. KMPO also intends to promote Federal-aid funds for safety and operational improvements throughout the regional planning area over the next 20 years. Projects to add capacity on other roadways may be developed using non-federal funding sources. Figure 9. Priority Corridors Map is shown on the following page:

Figure 9 - Priority Corridors Map



Land Use Issues

Land use along SH 41 is considered by many in the development community to be prime commercial property. Commercial development along highways has not traditionally included the use of secondary access roads to serve local traffic needs. SH 41 is expected by travelers to move traffic efficiently through the corridor. With increasing demand for numerous points of direct access to individual properties, continued flow of traffic along the corridor is expected to be impeded.

The original SH 41 Corridor Master Plan was focused to avoid corridor land uses from developing as strip commercial. Retention of the existing rural character was preferred through mixed-use development. Several commercial developments along Highway 41 were non-compliant with existing Kootenai County land use and zoning regulations, so this added to the importance of updating and improving the access management section of this study.

Street Connectivity

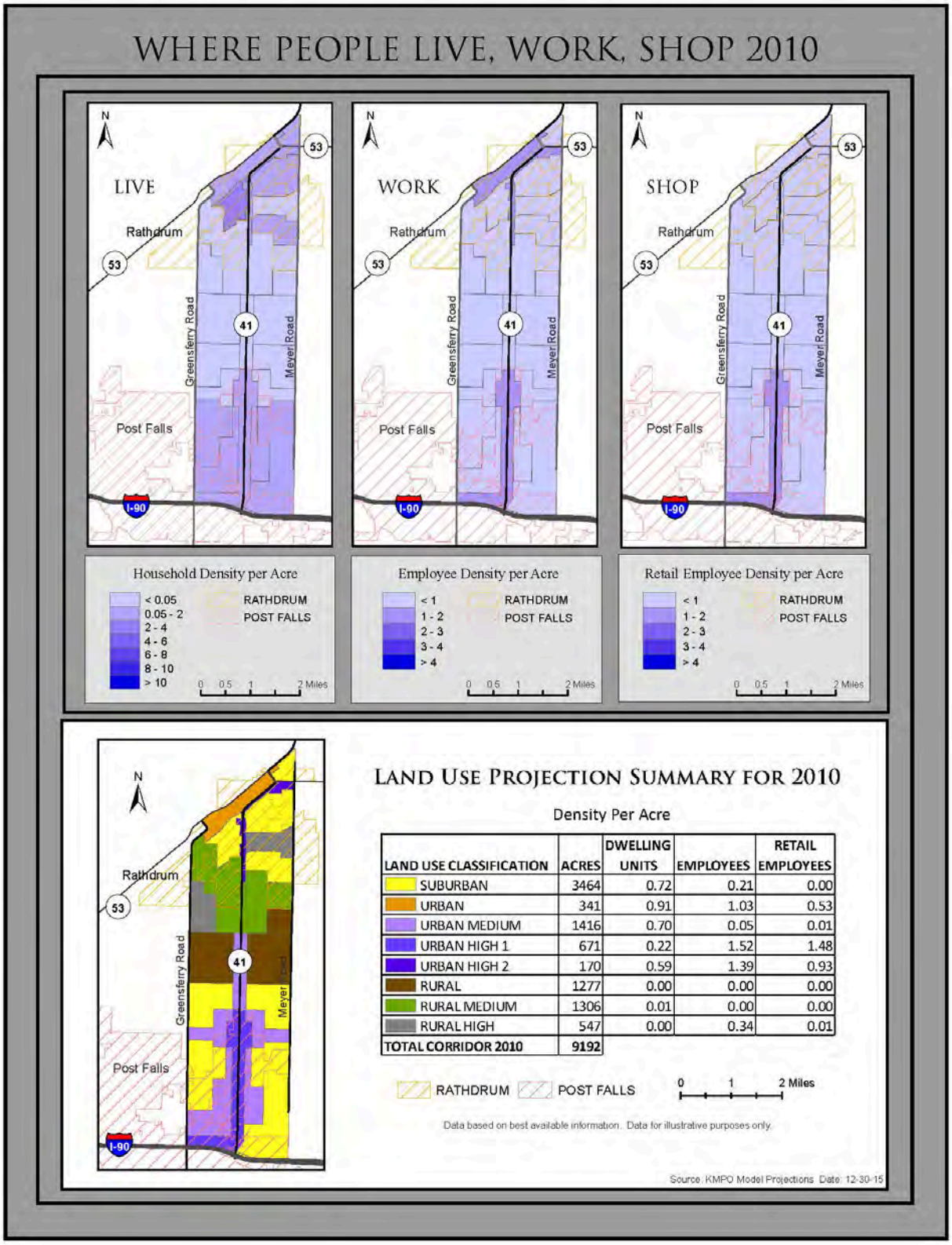
Street connectivity is a key to accommodating local traffic circulation without relying primarily on SH 41 as the primary access to properties within the study area. East-west arterial roads between Hayden/Coeur d'Alene and Highway 41 are currently limited to Interstate 90, Poleline, Prairie, Hayden Ave., Lancaster Road, Boekel Road and SH 53. Secondary north-south connector roads exist in the area that provide north/south routes, these are: Greensferry Rd., Idaho St., Huetter Rd., and Meyer Rd. These north-south roadways; however, do not provide a connection to I-90, but do provide alternate routes for north-south movement, along with the east west roads for local and intra area traffic between the various communities.

With the introduction of backage roads (secondary parallel access roadways adjacent to SH 41) and other east-west roadways for local traffic movement between communities, these alternate routes will help to alleviate congestion along SH 41. Additional east-west and north-south routes were shown to alleviate congestion on SH 41and provide route options to other areas on the Prairie.

Where People Live, Work and Shop

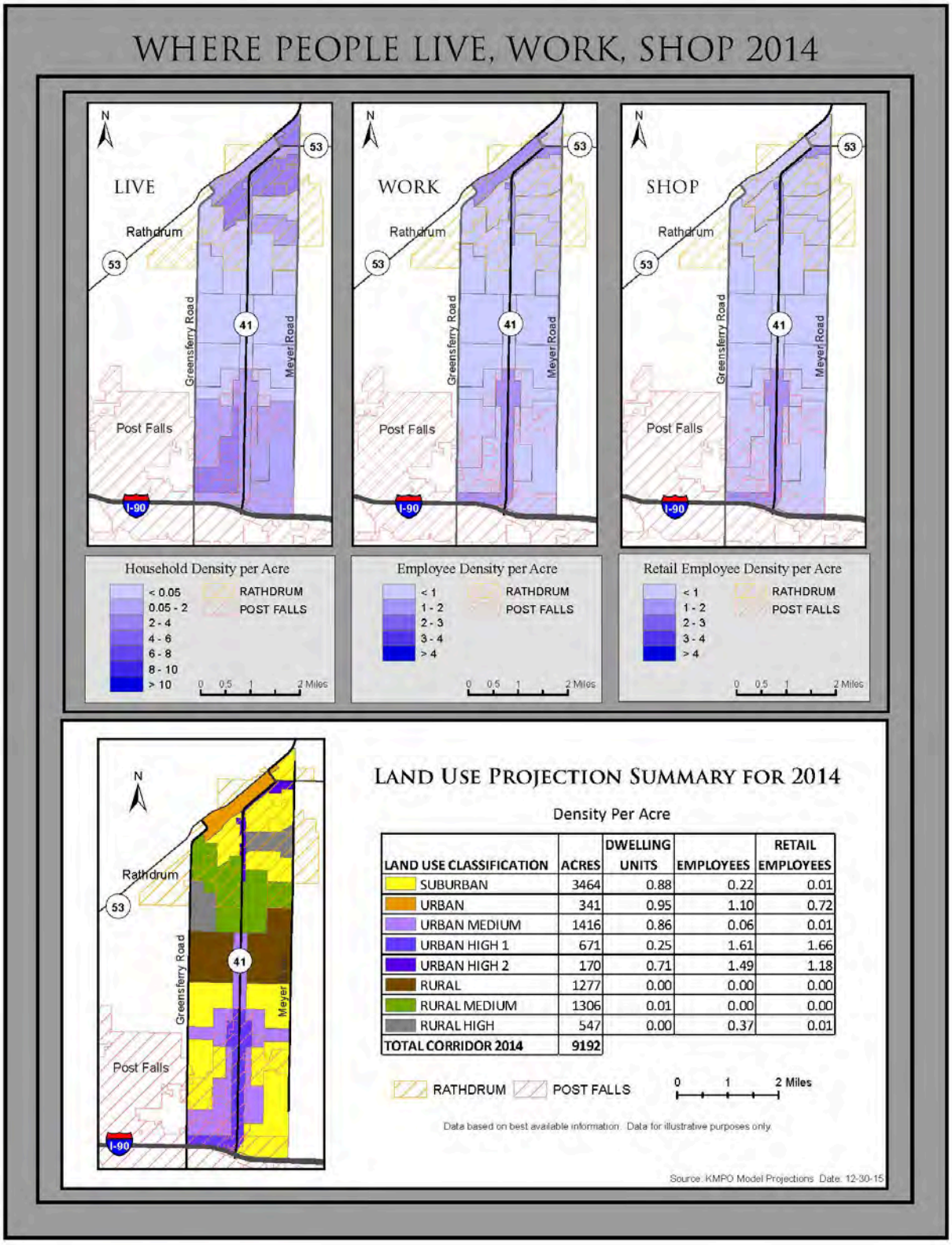
Travel patterns in the region are primarily defined by where people live, work and shop. Although there are many other types of trips that people make such as medical, recreational or social purposes; traveling to and from homes to places of work and retail centers dominate the regional transportation network. Maps on the following pages show the 2010, 2020 and 2035 main demographic patterns in the SH 41 Corridor:

Figure 10 - 2010 Where People Live, Work & Shop on SH 41



LAND USE CLASSIFICATION	ACRES	DWELLING UNITS	EMPLOYEES	RETAIL EMPLOYEES
SUBURBAN	3464	0.72	0.21	0.00
URBAN	341	0.91	1.03	0.53
URBAN MEDIUM	1416	0.70	0.05	0.01
URBAN HIGH 1	671	0.22	1.52	1.48
URBAN HIGH 2	170	0.59	1.39	0.93
RURAL	1277	0.00	0.00	0.00
RURAL MEDIUM	1306	0.01	0.00	0.00
RURAL HIGH	547	0.00	0.34	0.01
TOTAL CORRIDOR 2010	9192			

Figure 11 - 2014 Where People, Live & Shop on SH 41



LAND USE CLASSIFICATION	ACRES	DWELLING UNITS	EMPLOYEES	RETAIL EMPLOYEES
SUBURBAN	3464	0.88	0.22	0.01
URBAN	341	0.95	1.10	0.72
URBAN MEDIUM	1416	0.86	0.06	0.01
URBAN HIGH 1	671	0.25	1.61	1.66
URBAN HIGH 2	170	0.71	1.49	1.18
RURAL	1277	0.00	0.00	0.00
RURAL MEDIUM	1306	0.01	0.00	0.00
RURAL HIGH	547	0.00	0.37	0.01
TOTAL CORRIDOR 2014	9192			

Figure 12 - 2020 Where People Live, Work & Shop are Expected on SH 41

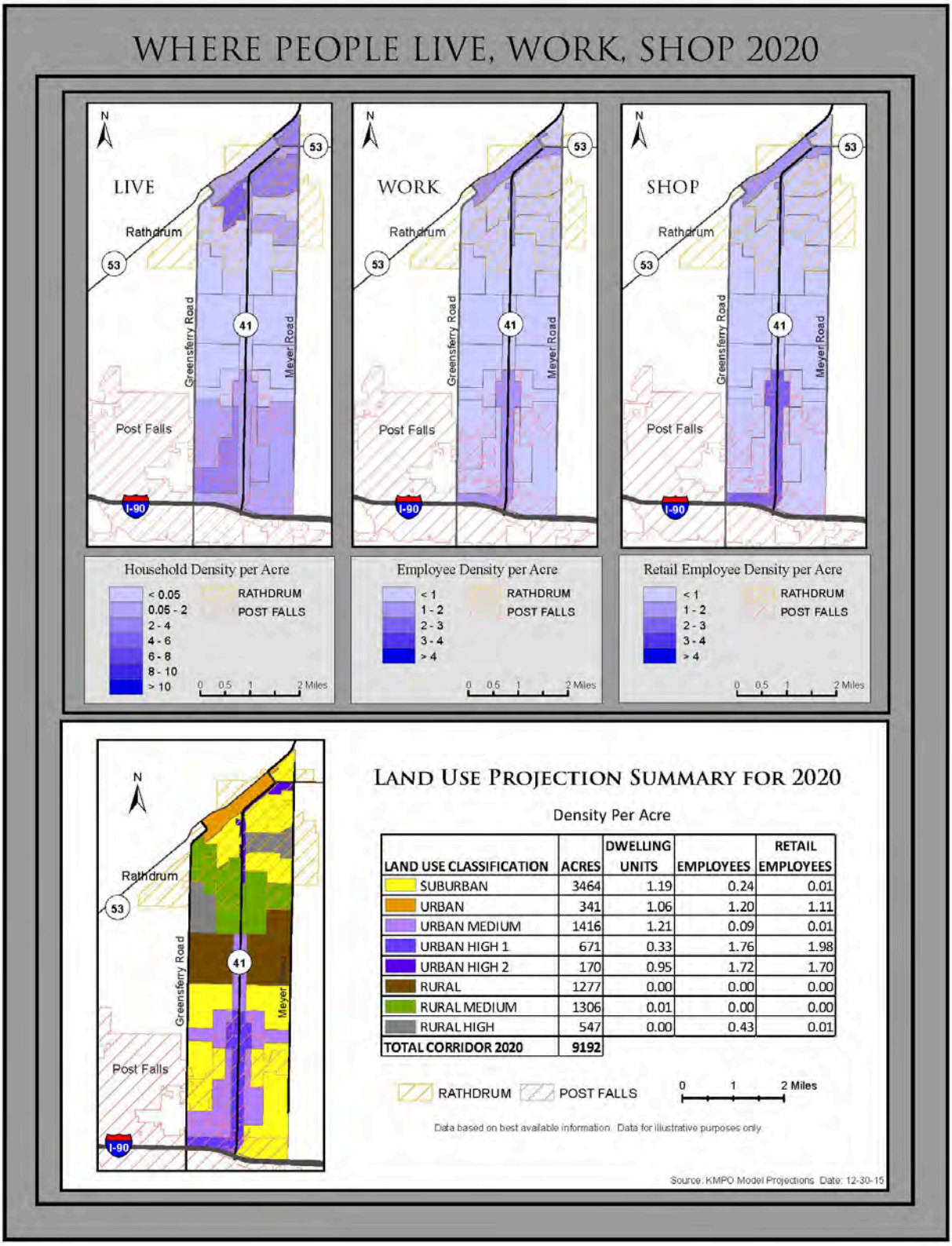
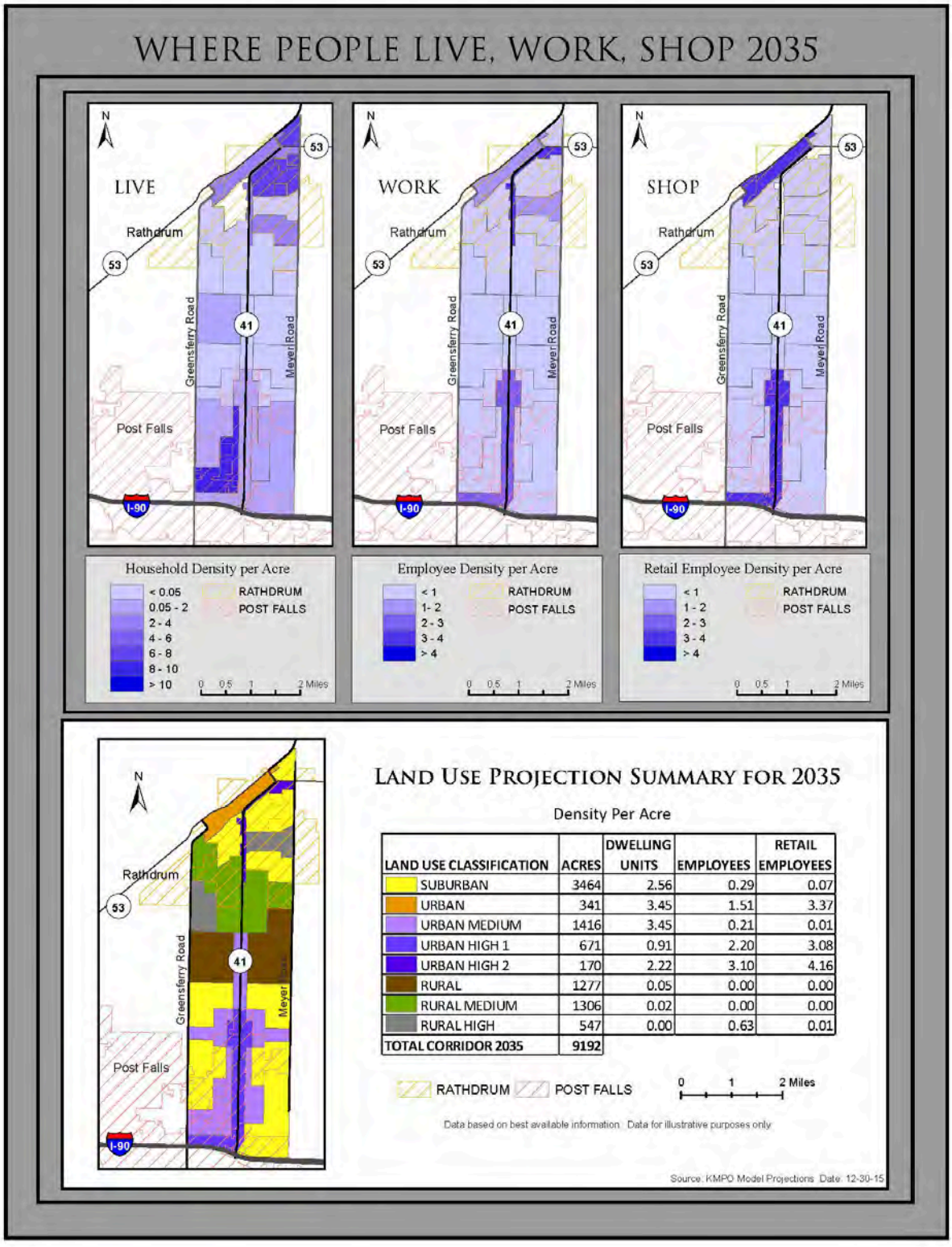


Figure 13 - 2035 Where People Live, Work & Shop Are Expected on SH 41



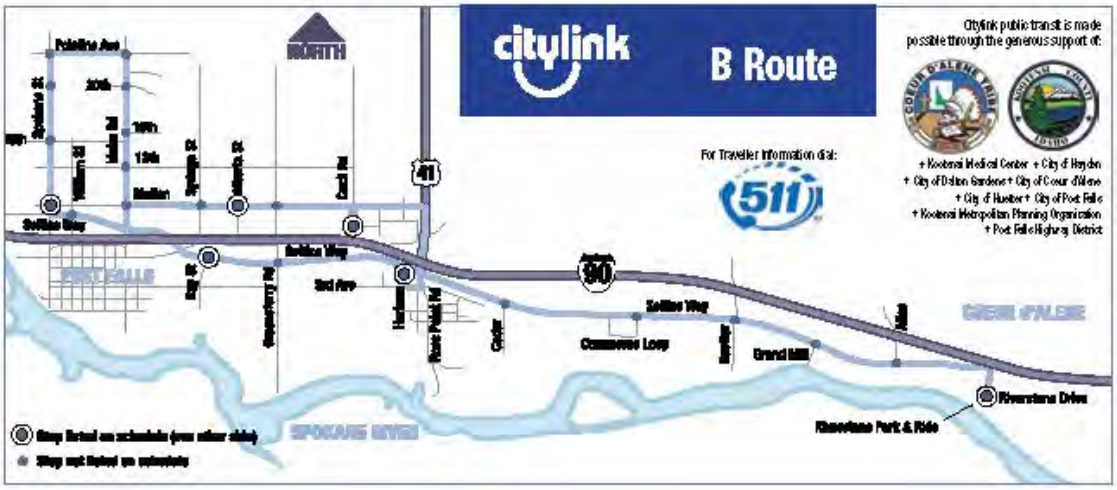
Opportunities for Multi-Modal Transportation

Current public transportation services within the study area is limited to Citylink fixed route service, Kootenai Health and Citylink Paratransit. Services are highly dependent on service area demands and availability of funding. The Coeur d'Alene Tribe and Kootenai Health partners with Kootenai County and the local jurisdictions to provide the current free transit service. There are STA Vanpools available to commuters with Spokane area destinations. Some private car/van pooling and paratransit services exist within the corridor; however, there is no Citylink service along SH41 at this time. Current service demand has grown and are expected to continue to increase.

Kootenai County is working on a plane to improve the transit service and is currently in the process of gathering surveys, collecting more data, soliciting public input and reworking the service route and processes.

A transit center location study was completed in 2009 and was adopted by the KMPO board, October, 1, 2009. The property has been purchased through federal grants by Kootenai County and the Coeur d' Alene Tribe, and Kootenai County is currently planning for the development and construction of the new transit center that will be located in the Riverstone Development. For more information please visit http://www.kcgov.us. City Link currently has limited service in the SH 41 highway corridor on the Blue Route as shown below:

Figure 14 - Citylink Transit



Ridership statistics for Citylink are updated monthly and are available on KMPO's website: http://www.kmpo.net.

Pedestrian and Bicycle Improvements

Within the SH-41 corridor proposed transportation improvements are recommended. Currently, non-motorized facilities are not provided on most roadways. Shared or joint use pedestrian/bicycle facilities are recommended for development with each new or reconstructed roadway segment of SH-41. Safe, convenient, and strategically developed joint use facilities connect and foster vibrant communities and attractive neighborhoods, which is what communities in Kootenai County envision for their citizens.

The City of Post Falls has requested that non-motorized pathways be constructed on both sides of SH-41.ITD has included in their upcoming SH-41 the construction of a joint use trail on the east side of the highway. The Corridor Plan recommends retaining sufficient right of way on the west side of SH-41 to provide a future joint use trail, which would be constructed and maintained by other.

In addition, the City of Post Falls and a number of county residents expressed a desire for a grade separated non-motorized trail crossing of the future Prairie Trail and SH-41, near Prairie Ave. The identified local priorities for continued expansion of the non-motorized network and provide safer access to/from the SH-41 corridor.

There are several factors that will need to be evaluated prior to recommending such a facility into the SH 41 Corridor Plan. This includes, Union Pacific Railroads existing and ongoing use of the current railroad right of way west of SH-41; travel demand on the trail that would justify the construction costs; connectivity to the existing and future trail plan; etc. These discussions will continue into the future and may be the subject of a corridor plan amendment in the future.

There is currently no dedicated funding available for a grade separated non-motorized structures, however funding may be obtained through future ITD Transportation Alternatives Program funds, private development, Urban Renewal, City funds, grant projects, etc.

A Regional Non-motorized Transportation Plan (RNMTP) for the pedestrian and bikeway system was completed by KMPO in December of 2009 in response to the need for coordination between jurisdictions in their respective pedestrian and bicycle improvement efforts.

The purpose of the plan was designed to serve as a tool for local agencies and citizens within the Kootenai region. It was developed in coordination with the public, the Non-Motorized Transportation Plan Advisory Group, and jurisdictional feedback, it synthesizes a regional vision and identifies challenges, opportunities, priorities, and recommendations to help facilitate further development toward a more walkable, bikeable region. The entire plan will be updated again in FY 2017. The Metropolitan Area Transportation Plan is currently the clearinghouse for a regional bikeway plan. A further study of the existing railroad service within the Prairie and any subsequent abandonment or realignment of service could provide opportunities for "Rails to Trails" redevelopment of rail corridors.

Safe, convenient bicycle and pedestrian facilities foster vibrant communities and attractive neighborhoods, which is what local communities envision for its citizens. The City of Post Falls recently constructed a pedestrian/bike trail on the east side of SH 41 from north of Seltice Way to the intersection of Mullan Ave. to provide connectivity to the existing trail. Additional portions of trail have been constructed along SH 41 with adjoining developments that have been built.

The Prairie Trail is anticipated to be extended in the future along the existing UPRXR right-of-way to just west of SH 41. In order to accomplish this the trail would need to cross SH 41. The question arose during the course of the update, regarding whether the trail would cross SH 41 using a signal or a grade separated structure. A grade separated structure is preferred by the City of Post Falls and bicycle advocates, although a signal could be installed instead or the trail alignment could be adjusted to converge at an arterial intersection for a signal installation. Either alternative would be dependent upon funding. A cost benefit analysis using the different alternatives should be completed prior to selecting the best option. The final decision would be made by the governing municipality and the Idaho Transportation Department.

It is expected that construction of backage roads would also entice non-motorized bicyclists and pedestrians to utilize the backage road corridor in lieu of using SH 41, if attractive bike lanes/paths are built along the routes. Since, the backage roads are parallel to SH 41 more non-motorized traffic may utilize the routes due to the lower speeds and traffic volumes.

Updated regional maps of the 2014 non-motorized system within the SH 41 corridor have been included in this study (see Figures 15 & 16).

Figure 15 - 2014 Regional Non-Motorized Map City of Post Falls

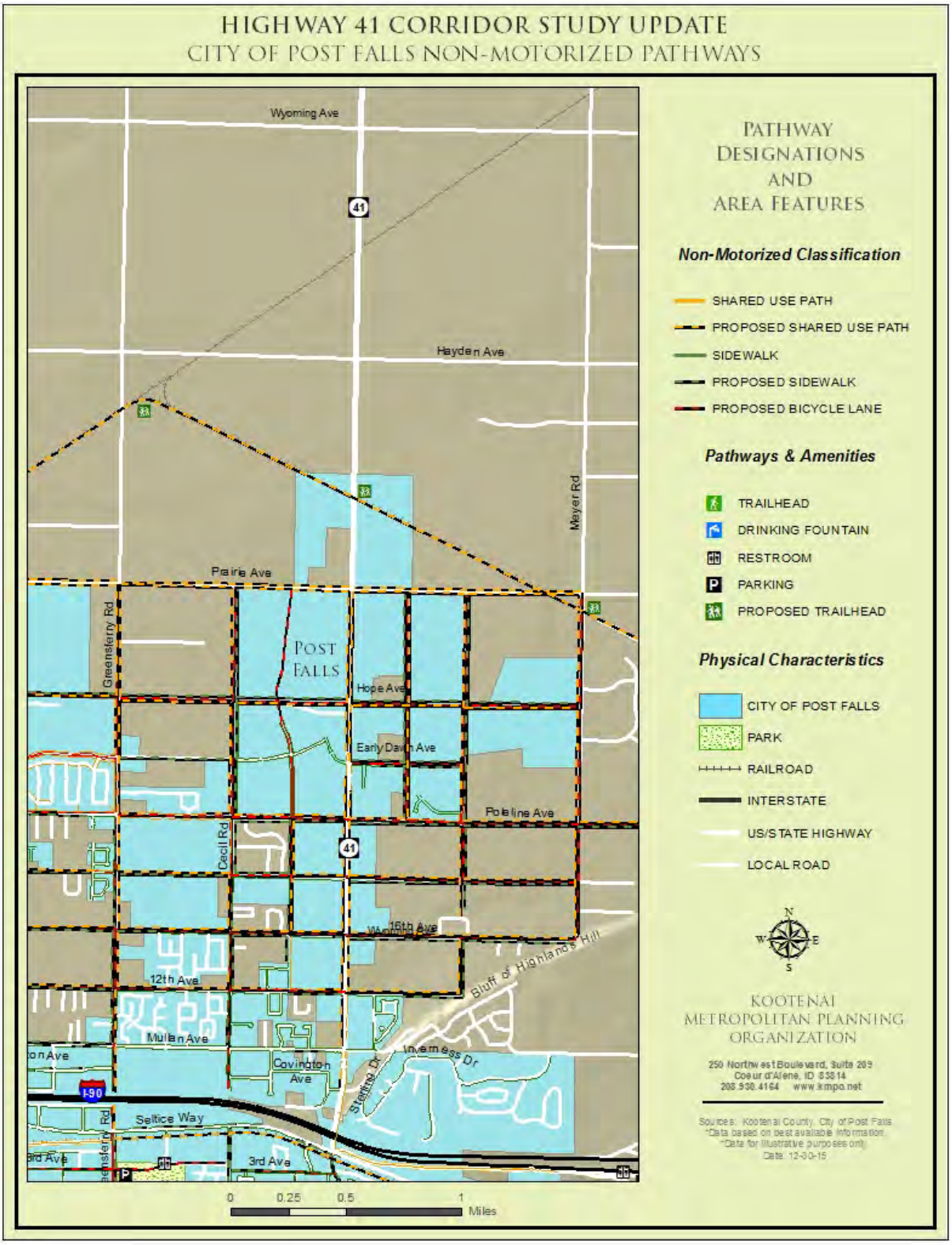
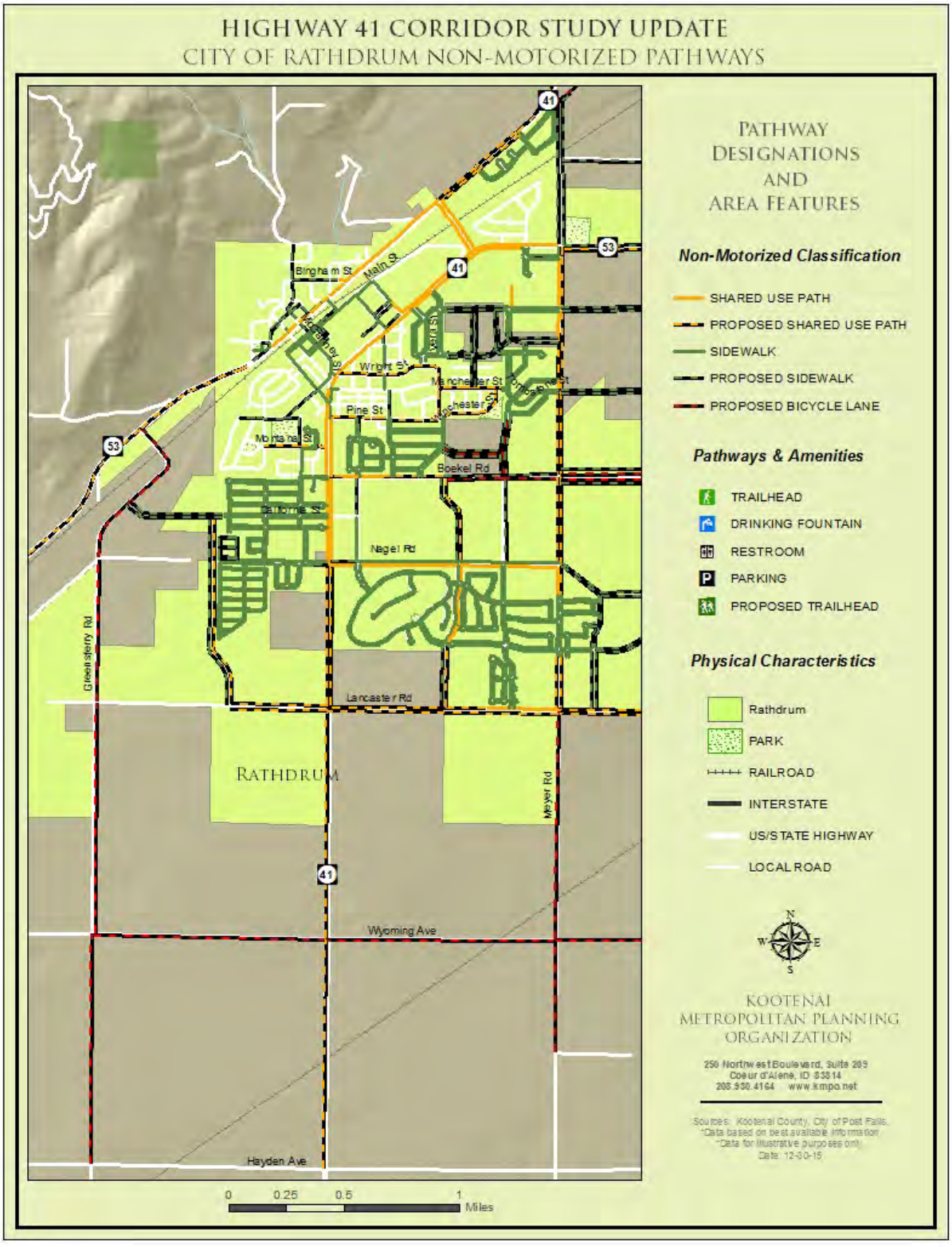


Figure 16 - 2014 Regional Non-Motorized Network - City of Rathdrum



PLANNED IMPROVEMENTS

Improvements Needed to the Corridor

As part of the original plan in 2002, the Metropolitan Area Transportation Plan designated the corridor for improvements to provide a four-lane divided highway with controlled access at intersections for left turning movements. The highway was planned to be a divided highway from Mullan Ave. to Boekel Rd. (see typical roadway sections, Figure 50).

Limiting access and widening of Highway 41 to Principal Arterial standards was outlined in the MOU between Post Falls and ITD between I-90 and Poleline Ave. as a five-lane facility. Kootenai County Area Transportation Team (KCATT) supports the addition of pedestrian circulation (sidewalks), bicycle paths, streetscape aesthetics., and barriers / design techniques to reduce visual impairment caused by blowing snow.

Currently pedestrian and bicycle movement within the corridor is limited within the highway right-of-way and considered an essential element that has been addressed as a part of this update. ITD has programmed transportation investments in the corridor between Mullan Ave and Boekel Road between 2018 and 2021. These improvements will include a joint use pedestrian/bicycle facility on the east side of the SH 41. This plan recommends retaining sufficient right of way on the west side of SH 41 to accommodate an additional joint use pedestrian/bicycle facility that would be built and maintained by others when warranted.

Limited access along SH 41 is crucial in the forecast years with traffic increasing, to help alleviate congestion along the corridor. Signal spacing is expected to be at half and one-mile spacing's with unsignalized intersections being restricted to right-in right-out only on the east-west roadways between I-90 and Boekel Rd. This is discussed in more detail in the Access Control Management section on page 115.

Infrastructure

Public wastewater treatment systems by municipal policy, are not extended to unincorporated areas of the County. This factor limits areas located within the corridor study area and outside the corporate boundaries of Post Falls and Rathdrum from being developed for commercial, industrial, and high-density residential purposes until annexed into the adjoining jurisdiction. Current public water supply is generally limited to the urban areas of Post Falls and Rathdrum. Areas within the County and portions of Post Falls are served by Ross Point Water District and East Greenacres Irrigation District. Power and natural gas services are also provided within the corridor. Stormwater management of impervious surfaces is currently through vegetative areas and typically incorporated into a developments site design. Future use of storm water management techniques, such as grass percolation (biofiltration) swales, are typically included in all new developments or redevelopment of existing properties.

The City of Post Falls has a LID (Local Improvement District), for the extension of wastewater service to serve areas adjacent to Highway 41. The system was completed in 2005. With the extension of these services, development of primarily commercial uses will likely continue to occur along the highway. Other local improvements have included widening and turn lanes at the intersection of Mullan Ave. and Highway 41, due to the addition of major commercial developments in the area.

The Idaho Water Resources Research Institute just recently released the Rathdrum Prairie Aquifer Future Water Demand Report (December 15, 2014). This is a technical report that quantifies the water needs within the Rathdrum Prairie based on population, use, future growth and water rights.

Wastewater treatment alternatives have improved the Prairie development. The city of Post Falls has expanded the development of wastewater treatment facilities from Mullan Ave. to Hope Ave. along SH 41. In addition, local jurisdictions have put together a long range master plan on how to implement

sanitary sewer within the study area to accommodate future needs. A Water Reclamation Facility Plan (Collections) was completed in June 2012 and is available on the following Post Falls website:

http://www.postfallsidaho.org/street_water/Water/WaterReclamationFacilityFinalPlan.pdf

The facility plan covers; regulatory overview, flow and load projections, alternatives, potential build-out site and a financial plan.

The Rathdrum Prairie Wastewater Master Plan was completed in April 2009 by the City of Rathdrum, City of Post Falls, City of Hayden and Kootenai County to address collection of sanitary sewer in the areas between the current boundaries of the participating cities.

The City of Rathdrum has experienced ongoing growth and with additional growth projected, the City of Rathdrum has begun work on adding a new potable water production well on the southwest side of Rathdrum. With the projection of producing 3,000 gallon-per-minute, this new well will be Rathdrum's largest water well and will assist with meeting water demands for the next 10 years. It is anticipated that this new well will be completed by Fall 2016.

Transportation

The City of Post Falls is also in the process of updating their 2015 Transportation Plan. The transportation plan focuses on; supporting economic growth and vitality, improving all modes of transportation, cost effectiveness, and ensuring funding and revenue.

The transportation plan is available at the following website:
http://postfallsidaho.org/PZDept/Engineering/EngProjects/TransportationPlanWeb/

A major Improvement was completed to Greensferry Rd., providing an overpass of I-90 between Seltice Way and Mullan Avenue. This improvement is expected to help alleviate congestion in the SH 41 area and provide additional north-south access across the interstate. The new Greensferry Overpass was completed and opened to traffic on November 12, 2015, utilizing funding by the Urban Renewal District of Post Falls, Idaho by City Ordinance 1242 extending the term of the East Post Falls District to December 21, 2022 to provide for adequate tax increment receipts to fund the project. The traffic signal at Seltice Way and Greensferry was updated and a new traffic signal was installed at Mullan Ave. & Greensferry Rd. as part of the project. The total cost of the project was approximately $ 9.4 million and does not include the right-of way acquisition for the project.

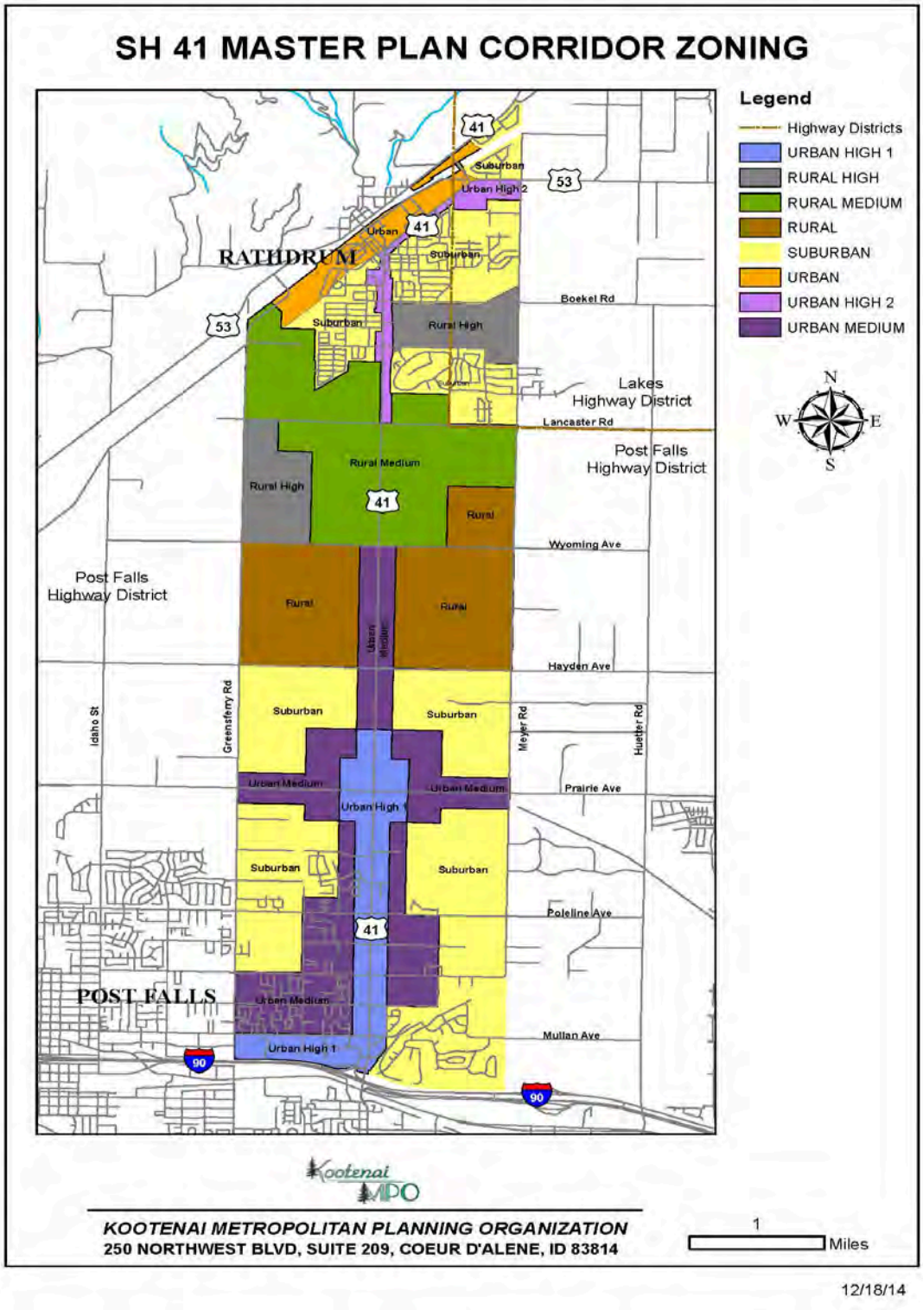
In addition, the ITD District 1 and the ITD Board identified SH 41 as a "priority," with improvements to the highway expected to be part of a capital improvement program during the next ten years. Changes to Highway 41 and I-90 are under the jurisdiction of ITD.

Intergovernmental Coordination

Inter-governmental coordination occurs though various means including Kootenai County Area Transportation Team (KCATT), Area of City Impact agreements, the Highway 41 Overlay Zone, the State Highway Access Control, and the Highway 41 Memorandum of Understanding. However, continued jurisdictional coordination will be needed to address the regional impacts associated with land use and transportation issues related to SH 41. Continuing to provide the option of a pre- development meetings between a developer and all of the affected agencies will be beneficial for furthering intergovernmental coordination.

These meetings are typically scheduled at the time a proposal is submitted to an agency for review and provide a developer with access to police, fire, water, wastewater treatment, and public works staff, as well as ITD and the Department of Environmental Quality, or County staff, when appropriate. The meetings allow for information dissemination and participation by all attendees setting the stage for a clear understanding of development concerns and criteria. Further, continued maintenance, update and use of the regional Travel Demand model is needed to accurately reflect ongoing changes in development and traffic patterns.

Figure 17 - Combined SH 41 Corridor Mixed Land Use Map



2014 updated collaborative zoning efforts between: City of Post Falls, City of Rathdrum, Kootenai County, Post Falls Highway District and Lakes Highway District.

Land Use Areas, Sub-Categories & Densities

Detailed land use is one of the primary inputs into the regional travel demand model. Accurate information on existing and future planned land use is the basis for KMPO's evaluation (as a metropolitan planning organization) of existing performance and is necessary to ensure that regional transportation investments are made appropriately.

Land use areas, sub-categories and densities within the corridor were changed slightly in this update to reflect continuing planning efforts and modifications to development densities similar to each jurisdiction's zoning ordinances made by the jurisdictional authority. The land use alternatives are composed of seven broad land use categories. These categories are not intended to represent specific land uses; rather, they represent a range of uses that will allow for flexibility in future development while maintaining the dominant land use characteristic.

Land use percentages of growth within the City of Post falls and with the city of Rathdrum were found to contain different growth patterns in some areas, and varying land use densities which is expected in these two communities. Each jurisdiction grows at different rates, so additional TAZ areas were formed to model the communities accordingly to match their planning and zoning along the corridor.

The following land use areas are simulated as TAZ zones for the travel demand model. The areas contain mixed land uses by percentages of the entire area.

The primary use is indicated by the name of each TAZ area within the corridor. The Highway 41 land use revised main land use areas are:

- Suburban - (Post Falls & Rathdrum Area)
- Urban - (Rathdrum Area)
- Urban Residential (Medium) – (Post Falls Area)
- Urban High 1 Residential – (Post Falls Area)
- Urban High 2 Residential – (Rathdrum Area)
- Rural – (Post Falls & Rathdrum Area)
- Rural Medium - (Rathdrum Area)
- Rural High – (Rathdrum Area)

The base year (2010) land use data is derived from the Kootenai County Assessor's/GIS office, Idaho Department of Labor, and KMPO staff research. Structure data from Kootenai County is used as the primary source for housing unit data for land use categories LU1, LU2 and LU9. The agricultural, waterfront and private land categories are also compiled from the Kootenai County data for categories LU11 – LU 13. The Idaho Department of Labor provides data used to populate land use categories LU3-LU5, and LU14 - LU23. The other land uses; LU6 – LU8, LU 10 are manually derived by KMPO staff and added to the data. The data is input by transportation analysis zones or TAZ's, TAZ zones are created using the US Census Bureau's census block data.

The land use for future travel demand forecast years are grown up based on historical growth data to determine future land use totals, such as; the housing and employment anticipated for future traffic volumes and conditions.

The 23 land use categories in the travel demand forecast models for specific land uses, use the North American Industry Classification or NAICs codes to define specific classifications of land use. The NAICS codes used in the travel demand forecast model is indicated in the table below:

Figure 18 - Land Use Based on NAICS Codes

2010 KMPO Land Use Update

LU1 – (SFDU) Single Family Residential includes those lands occupied by a single family home, duplex, or a manufactured home on a single lot. During calibration, this category was divided and single family uses in "outer zones" moved to Land Use category LU9 – Outer SFDU. LU1 is measured in single family dwelling units.

LU2 – (MFDU) Multi-Family Residential uses contain five or more residential units on a parcel of land. This category also includes mobile home parks, apartment buildings, and condominiums. LU2 is measured in multi-family dwelling units.

LU3 – (RET) Retail includes a broad range of establishments which sell goods directly to the general public, such as general commercial, home furnishings, food stores, direct selling establishments or other products. NAICS codes 441110 - 448320 & 451110 - 454390. LU3 is measured in employees.

LU4 – (FIRES) Finance, Insurance, Real Estate Rental & Leasing includes Commercial banking, financing, investment brokers, savings institutions, credit unions, investment advice, insurance carriers, real estate, rental and leasing, passenger car rental, recreational rentals, commercial air rail and water transportation, video tape and disc rental and other related companies. NAICS codes 521110 – 525990 & 531110 - 533110. LU4 is measured in employees.

LU5 – (INDUST) Industrial includes Mining, Manufacturing and Wholesale sectors which comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. This also includes the wholesale trade sector which comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The categories are mining operations, processing plants, packaging, mills, foundries, machining, wholesale goods merchants and wholesale trade agents and brokers. NAICS codes include 211111 – 213115, 311111 – 316998, 321113 – 327999, 331110 – 339999 & 423110 - 425120. LU5 is measured in number of employees.

LU6 – (SCH) Schools which include elementary and secondary schools. LU6 is measured in number of students. (manually derived).

LU7 – (ACCOM) Accommodations includes all hotel and motel establishments. NAICS codes 721110 - 721214. Hotels Motels, bed/breakfast inns and room/board houses. Measured by number of rooms (manually derived).

LU8 – (AER) Arts, Entertainment and Recreation includes theater companies and dinner theatres, musical groups and artists, sports teams and clubs, racetracks, museums, zoos, amusement and theme parks, casinos, marinas, golf courses, recreation centers, bowling centers, RV Parks and campgrounds and other amusement and recreation industries. NAICS codes 711110 - 713990. Measured by number of spaces (manually derived).

LU9 – (OSFDU) Outer Single Family Residential includes those lands occupied by a single family home, duplex, or a manufactured home on a single lot outside the urban area. Units from classification LU1 were moved to this category for zones 1-17, 182-185, 187, 188, 192-213, and 215. LU9 is measured in outer single family dwelling units (rural).

LU10 – (PSS) Post-Secondary School included Colleges, Universities, Computer, Trade, and Other Professional Schools. LU10 is measured by number of students (manually derived).

LU11 – (AGRI) Agriculture includes NAICS code 111110 – 115310 and is measured in number of acres.

LU12 – (WFRT) Waterfront Units includes dwelling units on the water such as houseboats. LU12 is measured in dwelling units. Not included in Land Use at this time (future).

LU13 – (POL) Publicly owned land includes that land that is owned by the public, such as forest and BLM land. LU13 is measured in acres. KMPO used Kootenai County GIS parcel data to establish acreages within each TAZ area.

LU14 – (TRNWH) Transportation & Warehousing includes the Postal Service, Couriers and express delivery services, local messengers and delivery, general, farm & refrigerated warehousing and storage. This category includes the Transportation and Warehousing sector which comprises industries providing transportation passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. NAICS codes 481111 – 488999 & 491110 - 493190. LU14 is measured in employees.

LU15 – (MED) Medical is described in as the Health Care and Social Assistance sector which comprises establishments providing health care and social assistance for individuals. NAICS codes 621111 - 624410. (Note: Kootenai Medical

Final Board Approved Land Use August 9, 2012

LAND USE Based on NAICS Codes (Cont.)

2010 KMPO Land Use Update

Center -KMC Employees are not reported under this section by DOL, but instead are under LU 16 Government). In the travel demand model. KMC employees will remain in LU 15 (MED) to maintain the same trip generation rates. LU15 is measured in number of employees.

LU16 - (GOVT) Government includes establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area (KMC medical employees are reported under this LU, by Idaho DOL). Measured in number of employees. NAICS codes 921110 - 928120.

LU17 – (ASWMR) Administrative and Support and Waste Management and Remediation Services includes office administrative services, temporary help services, telemarketing, collection agencies, visitor's bureaus, locksmiths, landscaping services, solid waste collection, landfills, incinerators, septic tank services and related industries. Measured in number of employees. NAICS codes 561110 - 562998.

LU18 – (PSTMC) Professional, Scientific & Technical Services & Management of Companies & Enterprises includes Offices of Notaries, Payroll services, testing laboratories, technical design services, outdoor advertising, etc. Measured in number of employees. NAICS codes 541110 - 541990 & 551111 - 551114.

LU19 – (EDUSRV) Education Services include support staff in elementary and secondary schools, junior colleges, business and secretarial schools, miscellaneous training schools and education support services. Measured in number of employees. NAICS codes 611110 - 611710.

LU20 - OTHER Services (Except Public Administration) includes automotive repair, appliance repair and maintenance, diet centers, funeral homes, laundry services, photo finishing laboratories, religious organizations, civic and social organizations, business associations, political organizations, parking lots and garages and other miscellaneous services. NAICS codes 811111 - 814110. Measured in employees.

LU21 – (INFO) Information includes newspaper companies, software publishers, recording studios, radio stations, telecommunications and libraries. Measured in number of employees. NAICS codes 511110 – 519190.

LU22 – (UTLCONST) Utilities & Construction includes power generation, transmission and distribution by: hydroelectric, fossil, solar, wind, geothermal, biomass, electric, gas and other. Also, includes water supply, steam and air-conditioning supply and sewage treatment facilities, construction of new homes, highway, street and bridge construction, contractors for: structural steel framing, roofing, siding, painting, flooring, site preparation and all other specialty trade contractors. NAICS codes 221111 - 221330 & 236115 - 238990. Measured in number of employees.

LU23 – (FS) Food Services includes caterers, mobile food services, full service restaurants, drive thru's, bars, cafeterias and buffets. NAICS codes 722110 - 722410, measured by number of employees.

Land Use Areas, Sub-Categories & Densities (Cont.)

The land uses that fall within the main land use areas are indicated by the name of each land use sub-category and the expected percentages of anticipated growth vary depending on which TAZ area they are in (See Figure 19). The Highway 41 land use sub-categories were developed with coordination with the cities, county and highway districts within the corridor, as follows:

- Office (KMPO LU: 4,14,16-19, 21 22)
- Retail (KMPO LU: 3, 23)
- Multi-Family Units (MFU) (KMPO LU: 2)
- Institutional / Schools /Churches) (KMPO LU: 6-8, 10, 15, 20)
- Agricultural / Open Space (KMPO LU: 11)
- Single Family Units (SFU) (KMPO LU: 1, 9)
- Industrial (KMPO LU: 5)

In order to determine the current land use densities, an analysis was done within the area of the SH 41 corridor from I-90 to SH 53 (north) and Greensferry Road to Meyer Road (east-west) using ArcGIS and data from the US 2010 Census Bureau. The total employees were calculated using data reported by the Idaho Department of Labor and acreage reported by the US Census Bureau. The employment land densities were then grown up from 2010 to 2035 at the overall historical Kootenai County growth rate of 2.40% compounded annually (See Table 1).

Table 3 - Land Use Densities

SUMMARY of Land Use Designations (in Acres) for Proposed Highway 41 Alternatives

Draft Revised - SH 41 Corridor Master Plan 2014	
LAND USE	**SIZE**
Suburban Residential	2-6 units / acre
Urban	2-6 units / acre
Urban Medium Residential	7 - 12 units / acre
Urban High 1 Residential	> 12 units / acre
Urban High 2 Residential	> 6 units / acre
Rural	< 2 units / acre
Rural Medium	> 2 units / acre
Rural High	> 4 units / acre
Retail	61 employees / acre
Office	74 employees / acre
Institutional/Schools/Churches	83 employees / acre
Industrial	31 employees / acre
Agricultural / Open Space	Varies - Seasonal Use

Employees per acre of land are based on actual sampling of land use category averages throughout the SH 41 corridor. In 2035 the total acreage of the rural agricultural land within the corridor is estimated to be 9,046 acres.

Field Documentation / Data Collection

Field visits were conducted during the summer of 2014 and 2015 to verify existing roadway and intersection conditions. Planning level information was collected for the transportation analysis and preliminary design level information was provided for the purpose of improvement recommendations. Roadway/intersection channelization data / numbers of lanes, turn bays, passing areas, etc.), intersection/driveways control types (stop control verses signal controls), roadway / shoulder widths, posted speed limits, and railroad crossings locations were noted as part of the initial field review. Additional field visits were conducted throughout the project to supplement / verify the initial field review or assess the potential for capacity improvements at specific locations.

Turning movement traffic counts were collected using a consultant to update the traffic conditions and Synchro analysis for the SH 41 Corridor master Plan. Forty-one turning movement count locations throughout the corridor were collected as part of the update.

The KMPO regional travel demand model was used for the SH 41 corridor update. The baseline data for modeled forecast traffic volumes was last updated in 2010. The model update included: number of lanes, capacities, turning bays, intersection channelization, land use (employment and population from the US Census Bureau), roadway projects, intersection control types, TAZ boundary changes and connector changes. The model was calibrated and over 200 actual traffic counts that had been collected were used to validate the model calibration. The next full update is scheduled for 2021 with the availability of the 2020 Decennial Census data.

Travel Demand Model Overview

A travel demand model is a computerized representation of the transportation and land use infrastructure within a community. Existing or forecast land uses are aggregated into Traffic Analysis Zones (TAZs) that typically represent major trip generators such as a residential neighborhood, commercial/retail developments, or work centers. The trip generation characteristics of each TAZ are identified so that the model can distribute traffic between TAZs through a computerized representation of the highway and arterial system. A TAZ can also represent a connection outside of a model, such as a principal arterial or highway that goes beyond the planning area. Manual counts and historical growth trends are typically used to identify traffic conditions for these roadways.

A travel demand model is typically developed to simulate peak hour traffic conditions. As such, trips generated for various land use categories within each TAZ are developed for the peak hour (AM or PM) based upon local data or nationally recognized sources, such as the Institution of Traffic Engineers (ITE) Trip Generation Manual. Trips are separated into peak hour origins and destinations for a varying array of trip types / purposes/(home-work, work- home, home-other, other-home, etc.) and then are assigned to the computerized roadway network to represent traffic conditions. The Travel 5 Home Interview Survey conducted in 2005 was used to customize the travel behavior patterns of residents in Kootenai County in order to calibrate the model for local conditions.

The road infrastructure of a model typically consists of the highways, principal, minor, and collector arterials that define the primary travel routes within a community. Local streets are typically included to enhance circulation and distribution of traffic to / from and between TAZs. Arterials and intersections are assigned attributes that allow the model to estimate travel delays, which in turn allows the model to select the most appropriate and often quickest route between TAZs. The typical factors that a model uses to estimate intersection / roadway delays and overall travel delays, in general, include arterial length / location, travel speeds, numbers of lanes, intersection control, and arterial/ intersection capacities. An adjustment to any or all of these factors can have an influence upon predicted travel patterns.

Traffic volumes generated by the model are assigned to a route and then referred to as a "loaded link" network. Loaded link assignments are validated through a process known as "calibration." Existing model assignments are compared with traffic counts to verify that the model is assigning traffic within a

relative percentage of error. Network and land use characteristics are adjusted iteratively until the model is "calibrated" with a reasonable percentage of error to real-time / existing traffic conditions, at which point forecast traffic /travel conditions can be developed. The remaining error between ground counts and model volumes is saved as an adjustment file to further calibrate forecast traffic volumes to real-time traffic conditions.

Future traffic volumes in a travel demand model are typically the function of applying the location and density of projected land use growth within the community. Land use growth is identified through interviews with agencies and stakeholders and/ or can also be estimated from historical growth resources, such as building permit data and data maintained by the U.S. Census Bureau. Trips generated are then estimated for each TAZ and the forecast traffic is then assigned to the transportation network in the same manner using the calibrated model.

Changes in capacity or constraints are typically used to test the impact of proposed developments or proposed improvement projects within the model. Each capacity change will alter the distribution of traffic and allows the user to compare and assess improvement alternatives. Many models have the capability to compare / assess measures of effectiveness (MOEs) through system measurements, such as vehicle hours of delay (VHD), vehicle hours of travel (VHT), Average speeds, Average delays, etc. Model MOEs are effective when comparing the impact of an improvement upon a large area, region, or for the entire model network. A model has the capability to create output files and these are typically transferred to other traffic programs with capabilities to assess specific corridors or intersections with more discreet analysis.

KMPO Travel Demand Model/LAND USE Adaptation

VISUM by PTV America is a proprietary software package was used to develop the KMPO travel demand model. KMPO updated the base model in 2010 for development of the Kootenai Metropolitan Transportation Plan. The KMPO model is routinely updated for use in plan updates and corridor studies and development reviews. The KMPO model has been used in this study to assess the traffic impact of the proposed land use alternatives and test capacity improvements within a mile to the east and west of the SH 41 Corridor. The SH 41 Corridor model was created from the KMPO regional model exclusively for the SH 41 corridor. No revisions have been made to update the KMPO base model outside of this project study corridor area.

During this update to the SH 41 Corridor Master Plan, new TAZ areas were created replacing the previous TAZ's throughout the corridor. This was done to reflect future land use within the corridor between the jurisdictions and is specific only to the travel demand modeling for traffic volume outputs based on land use growth assumptions by the jurisdictions. The original KMPO base model had a total of 18 TAZ zones within the corridor, with this update some TAZ zones were further disaggregated to better show areas of future growth for a total of 25 zones throughout the corridor.

New connectors were also created based on the TAZ zones, and the model matrices, trip generation and distribution changed based on the new zones and anticipated percentages of land use classification growth, within those areas as perceived by the jurisdictions involved.

This SH 41 corridor master plan, does not change, but incorporates each jurisdictions transportation and comprehensive land use plans. It was completed in conducted in a cooperative effort to obtain growth consistency and comparable land uses for the corridor. Each jurisdiction not only grows at a different population rate, but how they view future growth fitting into their own community. By looking at Figure 19, Future land use Categories and Subcategories, you can see that some of the land use categories are shared so the jurisdictions have a similarity between them on how the land use grows. In the land use categories that are not shared, there was not enough of a common thread to make them similar to one another, so another separate land use category (TAZ area) was created to more accurately depict the land use planning of that jurisdiction.

In this update, the land use growth used a slightly different methodology than the regional model. The new TAZ zones (or areas) were created based on the local jurisdictions assumptions of future land use within their community. The City of Rathdrum and the City of Post Falls assigned a designation for the

new TAZ areas (Urban, Urban High, Rural, etc.) along with percentages of growth expected within that area to equal 100% of the total projected growth. The only TAZ zones that use this methodology are the zones or areas within the study corridor, all of the remaining zones outside the corridor use the traditional methodology.

The 2010 land use was first projected into the future using the traditional method for the total County growth expected in the out year 2035. These values were entered into an excel spreadsheet. New calculations were made taking the total land use growth for each area using the percentages of future growth for each area that were assigned by the jurisdictions. The totals were checked against the existing 2010 existing land uses. If the future land use was lower than the existing land use for that area, the percentages were increased allowing for the future land use to be greater than the existing 2010 land use, within that designated area. Any changes to the percentages were taken back to the jurisdictions for concurrence.

In the SH 41 Corridor master plan update, travel demand models were created specifically for this update, there are a total of: 224 internal TAZs and 15 external TAZs that define the land use characteristics of Kootenai County. The residential and commercial characteristics of the County were summarized from twenty-three specific North American Industry Classification System (NAICS) code land use categories into seven main land use categories that were used in VISUM to provide the basis for estimating existing and forecast trip generation for the SH 41 corridor. Trip generations for these uses were developed based upon the methodologies of the ITE Trip Generation Manual and upon special National Cooperative Highway Research Program (NCHRP) reports assembled by the Transportation Research Board (TRB). PM peak hour trips were separated into home-based, work-based, and non-home based origins and destinations that were assigned to the model TAZ's and distributed through the roadway network based on relative arterial capacity, travel speed, and trip distances.

As indicated previously by this report, only the preferred land use alternative "Compact Mixed Use" was evaluated for the Highway 41 Corridor Master Plan. The Compact Mixed Use alternative as selected as a balance between the original Prairie and Commercial alternatives, and allows for both commercial and residential growth, while recommending the provision of open spaces and common areas.

Table 4 provides a summary of the forecast area designations for land use categories that make up the proposed Highway 41 corridor mixed use plan. These areas represent the future growth of the highway corridor, which, as indicated later in the Transportation & Implementation Section, will likely occur sometime after the 20-year horizon/analysis year (2035).

Table 4 - Land Use Designations

SUMMARY OF LAND USE DESIGNATIONS
(in Acres) for SH 41 Corridor TAZ Areas

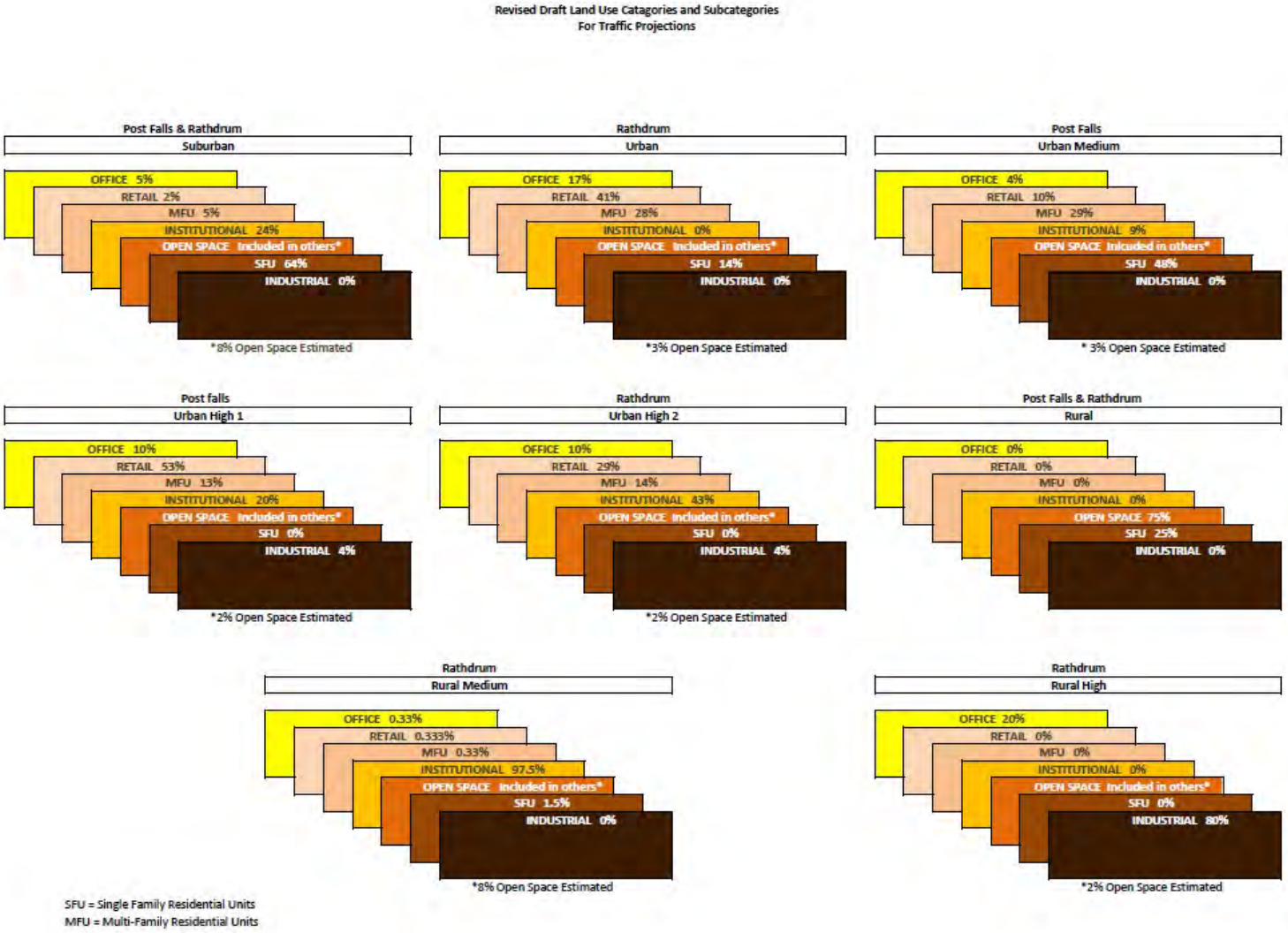
ZONE #	Land Use Category	Acres
300	Suburban	122.7
301	Urban	340.4
302	Urban High 2	170
303	Suburban	239
304	Suburban	422.3
305	Rural High	257.8
306	Suburban	278.9
307	Rural Medium	1311.2
308	Rural High	285.4
309	Rural	158.2
310	Rural	561.4
311	Urban Medium	254.9
312	Rural	559.6
313	Urban Medium	402.6
314	Suburban	404.5
315	Urban Medium	219.6
316	Urban High 1	660
317	Urban Medium	221.1
318	Suburban	535.5
319	Urban Medium	477.1
320	Urban Medium	240.7
321	Suburban	1029.8
322	Urban High 1	16.6
323	Suburban	24.8
TOTAL ACREAGE		9194.1

The Compact Mixed Land Use provides for flexibility in development, but is also intended to direct the composition (mix) and density of specific land uses so the intended character of the area designations Land use categories) can be maintained. Most of the land use category designations contain at least two or more land use types that can be represented in terms of the specific uses highlighted in the KMPO model. This designation allowed for the traffic impacts of each future land use alternative to be evaluated in VISUM.

Trip generation for developments associated with each of the land use alternatives were estimated based upon the same methodologies utilized for the KMPO model (application of ITE Trip Generation Manual and NCHRP report methodologies to derive trips and trip types). TAZs located within the corridor study area were then isolated so that overall trip generation and trip assignments (traffic growth) for the corridor could be examined and compared. Initially, the number of trips generated within the corridor for each alternative was significantly higher than historical development trends for the Highway 41 corridor and adjacent communities, such as the City of Post Falls (as identified through U.S. Census data).

The forecast traffic volumes generated for Highway 41 and the study arterials (by these land use alternatives) also exceeded historical growth patterns by a significant percentage (based upon historical lTD traffic counts). It was concluded that the initial numbers were more representative of full build-out conditions for each of the proposed alternatives, and that forecasts needed to be reduced to more accurately portray forecast 2035 land use and traffic conditions. When full build-out conditions will occur cannot be specified at this time and will vary significantly depending upon the rate of property absorption and its consistency with the currently approved land use plans.

Figure 19 - Future Land Use & Subcategories Percentages for Growth



Land Use Trip Totals

U.S. Census data indicate that population for the City of Post Falls has increased by approximately 4.8 percent per year during the last ten years and the City of Rathdrum has increased by 3.6 percent per year over the same time period. Staff from the Cities, County, and State anticipates that land use growth within the Highway 41 corridor could progress at a similar rate, if utilities and the transportation infrastructure can be constructed to support development. As such, the forecast land use alternatives were adjusted to be consistent with the growth rates identified through the U.S. Census for the City of Post Falls. The resulting trip totals and traffic assignments (volumes on Highway 41) were much more appropriate for a 20-year plan and were reasonable when compared with historical traffic data. Table 5 below, highlights the full build out trip totals for the 2010 existing, 2014, 2020 years and the 2035, 20-year horizon for trips within the SH 41 area corridor only.

Table 5 - Summary of Model Trip Totals SH 41 Corridor Area Only

Model Year	AM PK HR TRIPS	PM PK HR TRIPS
2010 Base	7,322.89	8,723.27
2014 Build	10,022.80	8,456.86
2020 Build	9,626.52	11,614.76
2035 No-Build	17,586.37	22,178.34
2035 Build	19,169.01	24,262.44

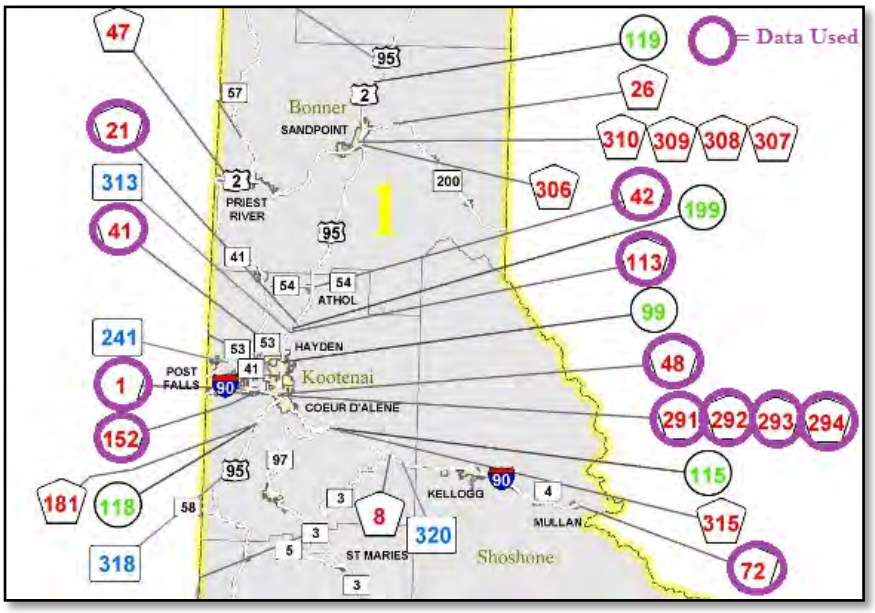
Forecast Traffic Model Volumes

Forecast traffic volumes were developed from the KMPO travel demand model for each of the future land use alternatives. As indicated, the trips generated by TAZs (internal and external) are assigned to a computerized representation of the highway and roadway system within the model. The volumes are calibrated and then used in system alternative comparison.

Depending upon location, PM PK Hour modeled forecast traffic volumes along Highway 41 in 2035 will be approximately -4 to 177 percent higher than existing 2010 modeled traffic volumes. The Average total growth rate through the SH 41 corridor is 63% (See Table 8).

An analysis was completed in order to compare the growth in the travel demand models to the actual traffic count data as a reasonableness check against the model forecasts. The analysis compared all of the Idaho Transportation Department (ITD) automatic traffic counters within the area and then the percentages were calculated based on the last 2 years, last five years, last fourteen years and the last 24 years.

Figure 20 - ITD Automatic Traffic Counters Map



www.http://itd.idaho.gov/highways/roadwaydata/Maps/ATR_WIMmap_map.html

The ITD counter stations used for the traffic count growth analysis were as follows: #1 Post Falls, #21 Chilco, #41 Rathdrum, #42 Athol, #49 North CDA, #72 Mullan, #113 Garwood, #152 Huetter, #291 NW Blvd., #292 Government Way, #293 15th Ave. and #294 Sherman. The results taken from the travel demand models (when comparing the 2010 to the 2035 for total growth) showed an Average percent per year growth rate of 2.16% per year, which is consistent with the historical growth rate analysis that was completed showing an Average of 1.72% within Kootenai County over the past 2 years and 2.162% over the past 5 years (see Table 6).

Table 6- ITD Automatic Traffic Recorders Growth Comparison

	Post Falls	Chilco	Rathdrum	N Rathdrum	Athol	N CDA	Mullan	Garwood	Huetter	NW Blvd	Govt Way	15th	Sherman
Average Daily Traffic ~ ITD ATR COUNTERS	1	21	40	41	42	48	72	113	152	291	292	293	294
1990	28475	8045	3896	5261	1682		4471						
1991	31213	8653	4133	5665	1792		4671						
1992	33224	9641	4520	6239	1964	24080	5035						
1993	36983	10421	4760	6527	2087	25480	5058						
1994	36922	10850	5214	7359	2177	27789	5546						
1995		11413		7712					38928				
1996		11542	5429		2124	26267		12395	39765				
1997	40812	11750	5768	7533	2100	26981	5651	12792	41871				
1998	42326	12333		7865	2248			13368					
1999	42474	13101	6135	7966	2308	28978	5915	14002	41575				
2000			6386	8034	2203	29702	6070	13965					
2001	43008	13078	6218	8149	2227	30815	6077	14097	43782				
2002	44645	13377	6260	8445	2322	29798		14385	47275				
2003	45531	13657	6433	8574	2338	30809	6370	14615	48157				
2004	47195	14206	6640	8772	2388	32823	6364	15251	49724				
2005	48877	14315	6771	8966	2567	34293	6392	15331	50679				
2006	50615	14804	6787	9284	2801	32992	6503	15943	53105				
2007	50785	15136	6950	9498	2840	30847	6657	16118	52579				
2008	47946		6662		2653	29405	6101		48387				
2009	48603	14074	6795				6320		51343				
2010	48568	14599		9312	2477	30805	6517		50660	40512	30491	26276	20340
2011			6907	8703		31667				40837	30480	25865	20170
2012			7064	8603		32338			50482	40938	30722	25957	20187
2013	50268		7153	8722	2354	32425	6759		51885	43112	30939	27816	20818
2014	52336	14109	7478	8752		33057	6849	14635	54006	43038	33854	27868	21943

NEW COUNTERS

Blank cells above were inconclusive and was not included

	Post Falls	Chilco	Rathdrum	N Rathdrum	Athol	N CDA	Mullan	Garwood	Huetter		
COUNTERS	1	21	40	41	42	48	72	113	152		
Up to Last 24 YEARS, *unless otherwise noted											
Available total years data for Average ADT	24	24	24	24	23	22	24	18	19		
Overall % Growth 1990 to 2014	1.84%	1.75%	1.92%	1.66%	1.40%	1.37%	1.53%	1.18%	1.39%		
Annual Growth % Per Year (At Counter Location)	2.57%	2.37%	1.70%	2.14%	1.47%	1.45%	1.79%	0.93%	1.74%		
Actual Growth over:	24 yrs	24 yrs	24 yrs	24 yrs	*23yrs	*22 yrs	24yrs	*18 yrs	*19 yrs	1.80%	Kootenai Avg. Annual Growth per Year, Overall Last 24 Years

	Post Falls	Chilco	Rathdrum	N Rathdrum	Athol	N CDA	Mullan	Garwood	Huetter		
COUNTERS	1	21	40	41	42	48	72	113	152		
Up to LAST 14 YEARS, * unless otherwise noted											
Total Overall Growth % 2000-2014	1.22%	1.08%	1.20%	1.07%	0.00%	1.07%	1.13%	1.04%	1.23%		
Annual Growth % Per Year (At Counter Location)	1.520%	0.590%	1.130%	0.610%	0.510%	0.770%	0.870%	0.340%	1.630%		
Actual Growth over:	*13 yrs	* 13yrs	14 yrs	14 yrs	*13 yrs	14 yrs	14 yrs	14 yrs	*13 yrs	0.886%	Kootenai Avg. Annual Growth per Year. Overall Last 14 Years

	Post Falls	Chilco	Rathdrum	N Rathdrum	Athol	N CDA	Mullan	Garwood	Huetter		
COUNTERS	1	21	40	41	42	48	72	113	152		
Up to LAST 5 YEARS											
Total Overall Growth % 2009-2014	1.08%	1.00%	1.10%	N/A	N/A	1.07%	1.08%	N/A	1.05%		
Annual Growth % Per Year (At Counter Location)	1.490%	5.000%	2.420%	N/A	N/A	1.420%	1.620%	N/A	1.020%		
Actual Growth over:	5 yrs	5 yrs	*4 yrs			5 yrs	5 yrs		5 yrs	2.162%	Kootenai Avg. Annual Growth per Year, Overall Last 5 Years

	Post Falls	Chilco	Rathdrum	N Rathdrum	Athol	N CDA	Mullan	Garwood	Huetter	NW Blvd	Govt Way	15th	Sherman	
COUNTERS	1	21	40	41	42	48	72	113	152	291	292	293	294	
LAST 2 YEARS														
Total Overall Growth % 2013-2015	1.041%	N/A	1.045%	1.003%	N/A	1.019%	1.013%	N/A	1.041%	N/A	1.094%	1.002%	1.054%	
Annual Growth % Per Year (At Counter Location)	2.040%	N/A	2.250%	0.170%	N/A	0.970%	0.660%	N/A	2.020%	N/A	4.600%	0.090%	2.670%	
Actual Growth over:	2 yrs		2 yrs	2 yrs		2 yrs	2 yrs		2 yrs	1.72%	Kootenai Avg. Annual Growth per Year, Overall Last 2 Years			

Historical Count Comparison Automatic Traffic Counters in Kootenai County Percentage of Growth, 2015

Actual Corridor Travel Times

Travel times were derived from actual drive time measurements in the late spring of 2016. To obtain ”congested” travel times, the corridor was driven five times in the morning peak period (6:30 to 8:30 a.m.), and five times in the evening peak period (4:00 to 6:00 p.m.). The times shown represent the highest five-run time for each peak period (AM and PM) as well as the lowest five-run times (fastest travel time) for the free flow measurement. Congestion should be expected to increase during the summer tourism season.

Table 7- Existing 2016 Corridor Travel Times

Time Period	Roadway and Direction of Travel	Congested Travel Time (min,sec)	Freeflow* Travel Time (min,sec)	Difference (min,sec) Congested - Freeflow	Segment Length	Corridor Delay Per Mile Diff = Congested - Freeflow travel time/Distance
AM Period	**SH 41 Northbound - Seltice Way to SH 53**	13 min 17 sec	11 min 22 sec	1 min 55 sec	7.7	**14.9 sec**
AM Period	**SH 41 Southbound - SH 53 to Seltice Way**	14 min 44 sec	11 min 58 sec	2 min 46 sec	7.7	**21.6 sec**
PM Period	**SH 41 Northbound - Seltice Way to SH 53**	13 min 19 sec	12 min 14 sec	1 min 05 sec	7.7	**8.4 sec**
PM Period	**SH 41 Southbound - SH 53 to Seltice Way**	15 min 33 sec	11 min 40 sec	3 min 53 sec	7.7	**30.3 sec**

The travel times showed some delay along the corridor, with the PM period southbound having the most delay.

Travel Demand Model - Vehicle Miles Traveled, Travel Times & Volumes

Traffic along the corridor is shown to increase all along SH 41 except between Mullan Ave. & Poleline Ave. The PM Peak Hour traffic volumes slightly decrease in the future 2035 forecast year due to other roadway project improvements in the area where people are taking different routes, such as the Greensferry Overpass. Many are traveling along Mullan Ave. when comparing the traffic volumes from 589 vehicles in 2010 to 1567 vehicles in 2035 (straight line growth) there is an increase of 166%, see Table 12. The highest traffic volume location for model volumes in the 2035 travel demand model along SH 41 is at Lancaster Ave. with 2821 vehicles in the PM PK Hour modeled volume for both directions which is an estimated 33,288 vehicles per day at that location and when compared to the 2010 modeled volumes show 1,112 vehicles in the PM PK HR, estimated at 13,122 vehicles per day at that location, which shows an increase of 154 % in volumes.

Table 8 - Summary of VMT & PM PK HR Model Volumes Along SH 41

Model Year	Total Vehicle Miles Traveled (Throughout Corridor)	Vehicle Hours Traveled tcur (Current total travel time in loaded network)	PM PK Hr Modeled Volume (Along corridor bothways)
2010 BASE	8,158.06 miles	192 hr 35 min 22 s	54,885
2014 BUILD	8,699.46 miles	208 hr 32 min 12 s	57,126
2020 BUILD	10,300.30 miles	264 hr 09 min 12 s	66,718
2035 NO-BUILD	11,932.45miles	401 hr 41 min 03 s	81,848
2035 BUILD	14,795.58 miles	342 hr 11 min 40 s	84,465

Data from SH 41 travel demand model: Seltice Way to SH 53 Junction, PM PK HR model data.

Although the model projections indicate a minimal decrease between Mullan Ave. and Poleline Ave. the four lane divided cross section is expected to better serve the traveling public, movement of commerce, prevent excessive congestion, as well as reduce rear end, side swipe and angle turning crashes. The volumes indicated are based on and are dependent on some demand shifting to other proposed roadway projects.

Whenever widening or other capacity improvements are being considered by ITD, a program called the *Transportation Economic Development Impact System* (TREDIS) provides a benfit/cost analysis for decision making in the planning process. The program looks at the: cost/benefit analysis, economic impact, financial impact and a freight and trade module within the program. The program compiles all of the data to enable ITD to make the best informed decision possible, based on information specific to the project.

Several transportation improvements and capacity strategies are proposed as a function of this plan for Highway 41 and primary study roadways and intersections. The improvements and strategies were developed in coordination with ITD, the Cities of Post Falls and Rathdrum, Kootenai County, and the Post Falls Highway District. An Average PM PK HR (both ways) traffic volumes traveling along Highway 41 from Seltice Way to the SH 41/53 junction, of 54,885 existing 2010 Average daily volume, with 57,126 Average daily volume in 2014, with 66,718 Average daily volume in 2020 and 84,465 for the projected 2035 Plan build-out in daily traffic volumes, see Table 8 above. From the year 2010 to the year 2035 Build the Average growth along the corridor is 54% in the future year.

The 2035 No-Build model is the 2014 roadway network with the 2035 land use and external traffic included. This scenario shows that the traffic along SH 41 increases in Average overall volume by 444 vehicles in the PM PK Hr and an approximately estimated 5239 cars per day (when comparing it to the 2035 Build model) which increases the traffic congestion and the overall travel time along the corridor.

U.S. Census data indicates that population for the City of Post Falls had increased by approximately 4.801 percent per year during the last ten years (from 2000 to 2010) and 3.549 percent per year for the City of Rathdrum. Staff from the Cities, County, and State anticipate that land use growth within the Highway 41 corridor could progress at a similar rate, if utilities and the transportation infrastructure can be constructed to support development. The improvements and strategies recommended by the Plan are considered to be financially feasible with construction being implemented based upon a variety of public and private funding sources.

The VISUM travel demand model gives us the best insight possible for predicting: travel patterns, travel times, vehicle miles traveled and modeled traffic volumes.

The plots on the following pages are reported directly from the travel demand models and shows the SH 41 corridor only:

Figure 21 – 2035 SH 41 NO-BUILD Model V/C Ratios

Existing Conditions with 2035 Land Use

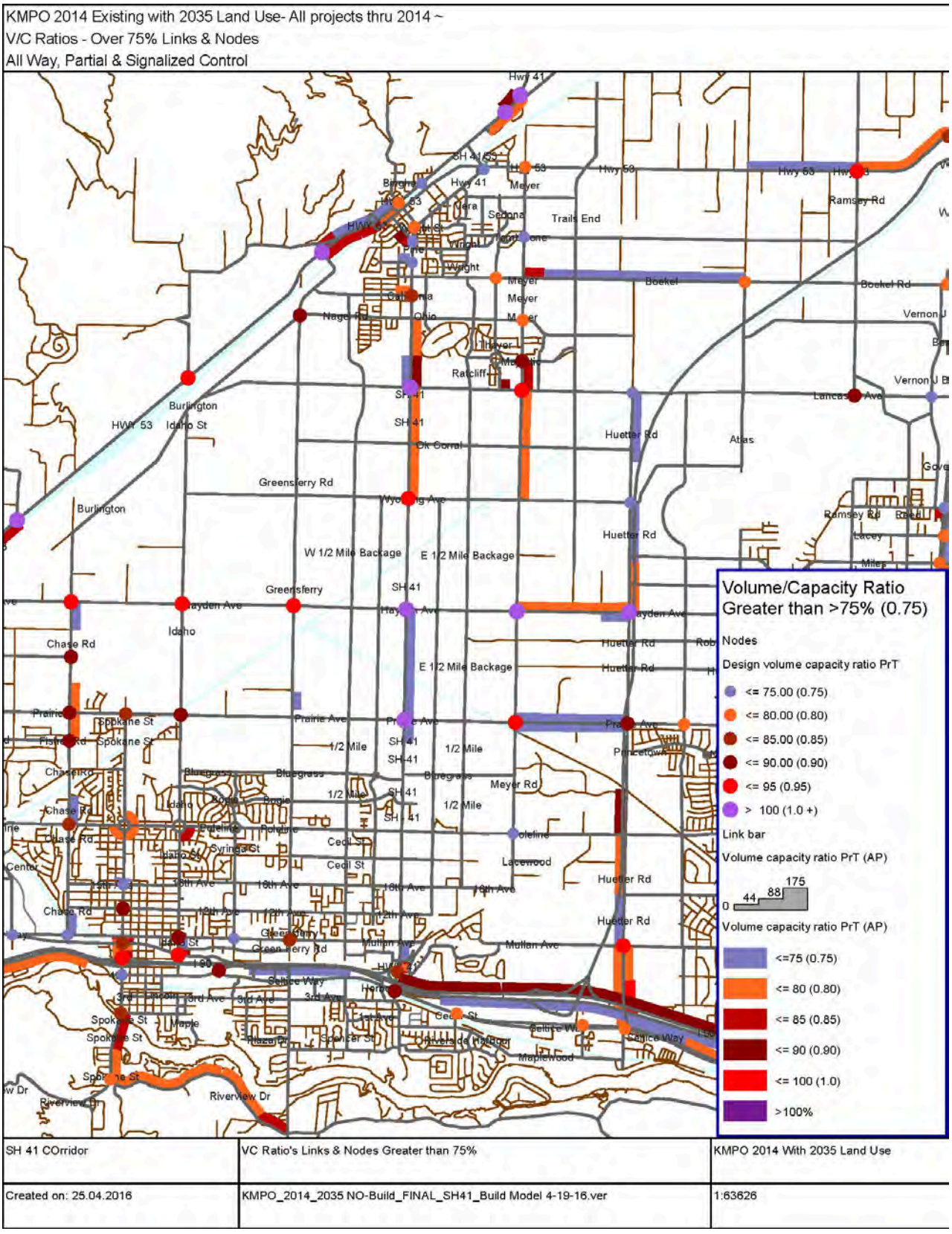
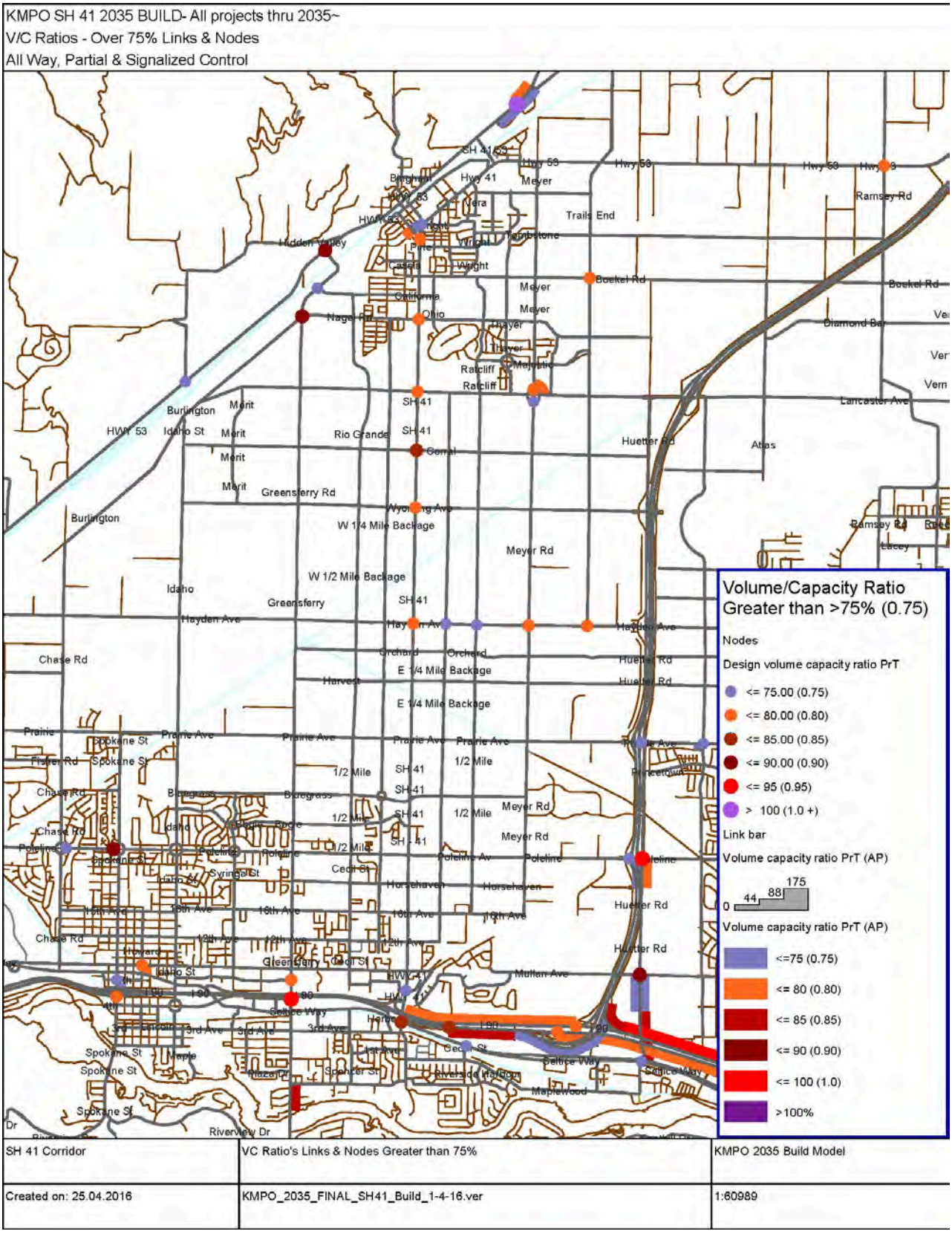


Figure 22 - 2035 SH 41 BUILD Model V/C Ratios

2035 Roadway Network (Projects up to 2035) with 2035 Land Use



As shown in the modeled volume to capacity ratios (V/C) in Figures 22 & 23 above, the model indicates intersection and link issues throughout the corridor in the 2035 No-Build Scenario. In the 2035 Build model indicates there are fewer problems associated with V/C ratios when transportation projects throughout the regional model have been constructed, thereby adding capacity to the overall network.

The regional travel demand modeled V/C ratios give a regional overview of congestion, whereas a Synchro® analysis as described in the next chapter provides a closer and more detailed analysis of the corridor.

Highway 41 provides a primary route of travel between the City of Post Falls and I-90 to the City of Rathdrum and State Highway 53 (SH 53). The original SH 41 Corridor Master Plan indicated the Origin and Destination surveys conducted for the US 95 project showed that between 40 and 50 percent of the traffic on Highway 41 occurs between Post Falls/I-90 and Rathdrum and an additional 15 to 20 percent occurring between Post Falls /I-90 and SH 53. As such, more capacity will be available for "through trips" between Post Falls / I-90 and Rathdrum /SH 53, with the model indicating that this capacity will be utilized in the future. The more intensive land-use plans generate more trips that require more capacity from Highway 41. This means that less "through trips" can occur and will seek to find other, less congested routes of travel throughout the region.

When looking at the PM PK HR volume on the various roadway segments along SH 41, the highest percentage of anticipated traffic growth occurs between Wyoming to Boekel Ave., with an overall Average of 154 % in anticipated traffic. The next highest growth occurs between Wright St. and the SH41/53 junction with an average increase of 124%. The following anticipated growth along SH 41 is shown below, with streets beginning at the south of the corridor northward;:

Table 9 - SH 41 % Difference in Growth Volumes 2010 - 2035

INTERSECTION	2010 SH41 MODEL PM PK HR	2035 SH41 BUILD MODEL PM PK HR	Overall Percent Growth, Straight Line
N/O Seltice Way	1,743	1,995	14.46%
S/O Mullan Ave	1,778	1,912	7.54%
S/O 12th Ave	1,404	1,305	-7.05%
S/O 16th Ave	1,449	1,398	-3.52%
S/O Poleline Ave	1,215	1,590	30.86%
S/O Prairie Ave	1,406	2,102	49.50%
S/O Hayden Ave	1,158	2,149	85.58%
S/O Wyoming Ave	1,115	2,595	132.74%
S/O Lancaster Ave	1,112	2,821	153.69%
S/O Nagel Lane	1,009	2,488	146.58%
S/O Boekel Road	549	1,523	177.41%
S/O Coeurd'Alene St	744	1,391	86.96%
South of Wright St	299	670	124.08%
S/O Main St	358	815	127.65%
S/O SH41/SH 53 JCT.	408	886	117.16%
Average	1,050	1,709	62.82%

Traffic on the adjacent north-south arterials which are Greensferry Rd. and Meyer Rd., are also expected to increase significantly. This increase is partially due to improved access provided by the Greensferry Rd. overpass constructed in 2015. Greensferry Rd. forecast traffic volumes are projected to increase from 115 % to 1449% depending upon the network link location and specific roadway. The forecast models predict traffic volume growth along Greensferry Rd. to increase by an Average of 465 % (along the entire roadway within the SH 41 Corridor boundaries). The forecast growth on Greensferry Rd. are shown below, at cross streets moving from south to north.

Table 10 - Greensferry Road Forecasted Traffic Volumes 2010 to 2035

INTERSECTION	2010 Greensferry MODEL PM PK HR	2035 Greensferry BUILD MODEL PM PK HR	Overall Percent Growth, Straight Line
N/O Mullan Ave	135	2,090	1448.15%
N/O 12th Ave	101	1,678	1561.39%
N/O 16th Ave	123	1,455	1082.93%
N/O Poleline Ave	189	1,065	463.49%
N/O Prairie Ave	321	859	167.60%
N/O Hayden Ave	141	777	451.06%
N/O Wyoming Ave	125	665	432.00%
N/O Lancaster Ave	125	693	454.40%
N/O Nagel Lane	351	920	162.11%
S/O SH 53	313	675	115.65%
Average	192	1,088	465.33%

Meyer Rd. forecast traffic volumes are projected to range from -17 to 600% from 2010 to the out-year 2035 depending upon the network link location and the specific roadway. The forecasts predict traffic volume growth along Meyer Rd. from 2010 to the out year 2035 to increase by an average of 35% (along\ the entire roadway within the SH 41 Corridor boundaries). The following growth on Meyer Rd. are shown below, from lowest to highest:

Table 11 Meyer Road Forecasted Traffic Volumes 2010 to 2035

INTERSECTION	2010 Meyer MODEL PM PK HR	2035 Meyer BUILD MODEL PM PK HR	Overall Percent Growth, Straight Line
N/O 16th Ave	7	49	600.00%
N/O Poleline Ave	19	130	584.21%
N/O Prairie Ave	31	55	77.42%
N/O Hayden Ave	470	519	10.43%
N/O Wyoming Ave	468	668	42.74%
N/O Lancaster Ave	532	957	79.89%
N/O Nagel Lane	349	385	10.32%
N/O Boekel Rd	396	428	8.08%
S/O SH 53	222	184	-17.12%
Average	277	375	35.32%

East-West roadways within the corridor (between Greensferry Rd. and Meyer Rd.) will experience similar growth of between 23% to 4600% average roadway increases from the year 2010 to the out-year 2035, as

the land use designations and growth rates are comparable. Higher percentages appear exaggerated due to the low existing traffic volumes compared to the future growth along the roadway. The following growth on east-west roadways are shown below, from lowest to highest:

Table 12 - East-West Roadways % Difference in Growth Volumes 2010 to 2035

INTERSECTION	2010 MODEL PM PK HR	2035 BUILD MODEL PM PK HR	Overall Percent Growth, Straight Line
Mullan Ave W/O Meger Rd	72	628	772.22%
Mullan Ave W/O SH 41	589	1,567	166.04%
Mullan Ave W/O Cecil Rd	267	833	211.99%
Mullan Ave W/O Greensferry Rd	606	1,172	93.40%
Mullan Ave Average	384	1,050	173.79%
12th Ave W/O SH 41	82	112	36.59%
12th Ave W/O Cecil Rd	75	132	76.00%
12th Ave W/O Greensferry Rd	145	434	199.31%
12th Ave Average	101	226	124.50%
16th Ave W/O Meger Rd	7	49	600.00%
16th Ave W/O SH 41	111	542	388.29%
16th Ave W/O Cecil Rd	96	132	37.50%
16th Ave W/O Greensferry Rd	173	434	150.87%
16th Ave Average	97	289	198.97%
Poleline Ave W/O Meger Rd	294	2,291	679.25%
Poleline Ave W/O SH 41	339	1,355	299.71%
Poleline Ave W/O Cecil Rd	479	1,021	113.15%
Poleline Ave W/O Greensferry Rd	474	1,035	118.35%
Poleline Ave Average	397	1,426	259.52%
Prairie Ave W/O Meger Rd	1,222	1,885	54.26%
Prairie Ave W/O SH 41	673	1,617	140.27%
Prairie Ave W/O W 1/2 mile Rd	N/A	1,642	N/A
Prairie Ave W/O Greensferry Rd	474	1,474	210.97%
Prairie Ave Average	592	1,655	179.36%
Hagden Ave W/O Meger Rd	1,115	1,606	44.04%
Hagden Ave W/O SH 41	444	703	58.33%
Hagden Ave W/O W 1/2 mile Rd	N/A	684	N/A
Hagden Ave W/O Greensferry Rd	291	721	147.77%
Hagden Ave Average	463	929	100.76%
Wyoming Ave W/O Meger Rd	5	235	4600.00%
Wyoming Ave W/O SH 41	2	8	300.00%
Wyoming Ave W/O Rio Grande Rd	N/A	11	N/A
Wyoming Ave W/O Greensferry Rd	5	90	1700.00%
Wyoming Ave Average	4	86	2050.00%
Lancaster Rd W/O Meger Rd	84	487	479.76%
Lancaster Rd W/O SH 41	15	119	693.33%
Lancaster Rd W/O Greensferry Rd	N/A	151	N/A
Lancaster Rd Average	50	379	664.65%
Nagel Lane W/O Meger Rd	45	224	397.78%
Nagel Lane W/O Ratcliff	85	222	161.18%
Nagel Lane Ave W/O SH 41	332	774	133.13%
Nagel Lane Average	154	407	164.07%
Boekel Rd W/O Meger Rd	233	768	229.61%
Boekel Rd W/O Ratcliff	233	288	23.61%
Boekel Rd W/O SH 41	14	283	1921.43%
Boekel Rd Average	120	446	271.94%

A more detailed comparison of traffic volume changes and ADT estimates can be found below in the Tables 13-15.

Table 13 - PM PK HR Model Volumes & Estimated ADT Along SH 41

INTERSECTION	2010 SH41 MODEL PM PK HR	2010 SH 41 PM PK HR BASE EST. ADT	2010 SH 41 MODEL AM PK HR	2010 SH 41 AM PK HR BASE EST. ADT	2014 SH41 BUILD MODEL PM PK HR	2014 SH 41 PM PK HR BUILD EST. ADT	2014 SH41 BUILD MODEL AM PK HR	2014 SH 41 AM PK HR BUILD EST. ADT	2020 SH41 MODEL PM PK HR	2020 SH 41 PM PK HR BASE EST. ADT	2020 SH 41 MODEL AM PK HR	2020 SH 41 AM PK HR BASE EST. ADT	2035 SH41 NO-BUILD MODEL PM PK HR	2035 SH 41 NO-BUILD EST. ADT	2035 SH41 AM PK HR NO-BUILD MODEL PM PK HR	2035 SH 41 AM PK HR NO-BUILD EST. ADT	2035 SH41 BUILD MODEL PM PK HR	2035 SH 41 BUILD EST. ADT	2035 SH41 AM PK HR BUILD MODEL PM PK	2035 SH 41 AM PK HR BUILD EST. ADT
N/O Seltice Way	1,743	20,567	1,329	17,676	1,860	21,948	1,435	19,086	1,791	23,820	1,370	18,221	1,943	22,927	1,120	14,896	1,995	23,541	1,520	20,216
S/O Mullan Ave	1,778	20,980	1,461	19,431	1,890	22,302	1,585	21,081	1,990	26,467	1,676	22,291	2,670	31,506	2,158	28,701	1,912	22,562	1,689	22,464
S/O 12th Ave	1,404	16,567	1,135	15,096	1,475	17,405	1,234	16,412	1,498	19,923	1,310	17,423	1,867	22,031	1,310	17,423	1,305	15,399	1,212	16,120
S/O 16th Ave	1,449	17,098	1,185	15,761	1,504	17,747	1,262	16,785	1,699	22,597	1,349	17,942	2,089	24,650	1,413	18,793	1,398	16,496	1,182	15,721
S/O Poleline Ave	1,215	14,337	949	12,622	1,319	15,564	995	13,234	1,590	21,147	1,144	15,215	1,631	19,246	1,018	13,539	1,590	18,762	1,268	16,864
S/O Prairie Ave	1,406	16,591	1,117	14,856	1,592	18,786	1,395	18,554	1,725	22,943	1,473	19,591	2,056	24,261	1,884	25,057	2,102	24,804	1,453	19,325
S/O Hayden Ave	1,158	13,664	943	12,542	1,227	14,479	1,114	14,816	1,266	16,838	1,217	16,186	1,561	18,420	1,367	18,181	2,149	25,358	1,691	22,490
S/O Wyoming Ave	1,115	13,157	932	12,396	1,170	13,806	1,044	13,885	1,450	19,285	1,311	17,436	1,549	18,278	1,284	17,077	2,595	30,621	2,071	27,544
S/O Lancaster Ave	1,112	13,122	930	12,369	1,201	14,172	1,047	13,925	1,583	21,054	1,386	18,434	1,691	19,954	1,424	18,939	2,821	33,288	2,214	29,446
S/O Nagel Lane	1,009	11,906	815	10,840	1,133	13,369	962	12,795	1,415	18,820	1,243	16,532	1,711	20,190	1,493	19,857	2,488	29,358	1,997	26,560
S/O Boekel Road	549	6,478	476	6,331	637	7,517	591	7,860	665	8,845	609	8,100	776	9,157	639	8,499	1,523	17,971	1,118	14,869
S/O Coeurd'Alene St	744	8,779	635	8,446	899	10,608	730	9,709	1,155	15,362	943	12,542	1,331	15,706	1,075	14,298	1,391	16,414	1,111	14,776
South of Wright St	299	3,528	272	3,618	319	3,764	324	4,309	482	6,411	428	5,692	555	6,549	465	6,185	670	7,906	531	7,062
S/O Main St	358	4,224	318	4,229	438	5,168	418	5,559	596	7,927	478	6,357	1,190	14,042	848	11,278	815	9,617	619	8,233
S/O SH41/SH 53 JCT.	408	4,814	471	6,264	589	6,950	558	7,421	762	10,135	669	8,898	1,285	15,163	1,024	13,619	886	10,455	786	10,454
Average	1,050	12,388	865	11,498	1,150	13,572	980	13,029	1,311	17,438	1,107	14,724	1,594	18,805	1,235	16,423	1,709	20,170	1,364	18,143

Note: Estimated ADT based on 2005 Spokane/Kootenai County Household Travel Survey, Page 22, 5:00 p.m. AVG. (PM PK HR *11.8), AM PK HR * 13.3

Table 14 - PM PK HR Model Volumes & Estimated ADT Along Greensferry & Meyer Roads

Model Volumes & Estimated ADT Along Greensferry Rd

INTERSECTION	2010 Greensferry MODEL PM PK HR	2010 Greensferry BASE EST. PM PK HR ADT	2010 Greensferry MODEL AM PK HR	2010 Greensferry BASE EST. APM PK HR ADT	2014 Greensferry BUILD MODEL PM PK HR	2014 Greensferry BUILD EST. PM PK HR ADT	2014 Greensferry BUILD MODEL AM PK HR	2014 Greensferry BUILD EST. PM AK HR ADT	2020 Greensferry MODEL PM PK HR	2020 Greensferry BASE EST. PM PK HR ADT	2020 Greensferry MODEL AM PK HR	2020 Greensferry BASE EST. APM PK HR ADT	2035 NO-BUILD Greensferry MODEL PM PK HR	2035 NO-Build Greensferry BASE EST. PM PK HR ADT	2035 NO-BUILD Greensferry MODEL AM PK HR	2035 NO-BUILD Greensferry BASE EST. APM PK HR ADT	2035 Greensferry BUILD MODEL PM PK HR	2035 Greensferry BUILD EST. PM PK HR ADT	2035 Greensferry BUILD MODEL AM PK HR	2035 Greensferry BUILD EST. AM PK HR ADT
N/O Mullan Ave	135	1,593	79	1,051	191	2,254	125	1,663	1,003	13,340	728	9,682	564	7,501	416	5,533	2,090	24,662	1,325	17,623
N/O 12th Ave	101	1,192	77	1,024	143	1,687	120	1,596	859	11,425	713	9,483	465	6,185	480	6,384	1,678	19,800	1,081	14,377
N/O 16th Ave	123	1,451	61	811	277	3,269	215	2,860	874	11,624	720	9,576	628	8,352	557	7,408	1,455	17,169	1,019	13,553
N/O Poleline Ave	189	2,230	205	2,727	310	3,658	252	3,352	372	4,948	276	3,671	623	8,286	630	8,379	1,065	12,567	642	8,539
N/O Prairie Ave	321	3,788	200	2,660	481	5,676	352	4,682	595	7,914	488	6,490	1,071	14,244	956	12,715	859	10,136	613	8,153
N/O Hayden Ave	141	1,664	108	1,436	206	2,431	175	2,328	570	7,581	371	4,934	1,016	13,513	726	9,656	777	9,169	498	6,623
N/O Wyoming Ave	125	1,475	94	1,250	164	1,935	141	1,875	332	4,416	220	2,926	634	8,432	399	5,307	665	7,847	382	5,081
N/O Lancaster Ave	125	1,475	93	1,237	165	1,947	141	1,875	334	4,442	221	2,939	673	8,951	495	6,584	693	8,177	404	5,373
N/O Nagel Lane	351	4,142	281	3,737	461	5,440	260	3,458	678	9,017	514	6,836	911	12,116	677	9,004	920	10,856	772	10,268
S/O SH 53	313	3,693	266	3,538	403	4,755	331	4,402	524	6,969	431	5,732	481	6,397	444	5,905	675	7,965	504	6,703
Average	192	2,270	146	1,947	280	3,305	211	2,809	6,141	81,675	4,682	62,271	7,066	93,978	5,780	76,874	1,088	12,835	724	9,629

Model Volumes & Estimated ADT Along Meyer Rd

INTERSECTION	2010 Meyer MODEL PM PK HR	2010 Meyer BASE EST. PM PK HR ADT	2010 Meyer MODEL AM PK HR	2010 Meyer BASE EST. APM PK HR ADT	2014 Meyer BUILD MODEL PM PK HR	2014 Meyer BUILD EST. PM PK HR ADT	2014 Meyer BUILD MODEL AM PK HR	2014 Meyer BUILD EST. AM PK HR ADT	2020 Meyer MODEL PM PK HR	2020Meyer BASE EST. PM PK HR ADT	2020 Meyer MODEL AM PK HR	2020 Meyer BASE EST. APM PK HR ADT	2020 Meyer MODEL PM PK HR	2020Meyer BASE EST. PM PK HR ADT	2020 Meyer MODEL AM PK HR	2020 Meyer BASE EST. APM PK HR ADT	2035 Meyer BUILD MODEL PM PK HR	2035 Meyer BUILD EST. PM PK HR ADT	2035 Meyer BUILD MODEL AM PK HR	2035 Meyer BUILD EST. AM PK HR ADT
N/O 16th Ave	7	83	7	93	10	118	10	133	7	83	12	160	369	4,354	198	2,633	49	578	9	120
N/O Poleline Ave	19	224	15	200	128	1,510	18	239	8	94	18	239	695	8,201	475	6,318	130	1,534	136	1,809
N/O Prairie Ave	31	366	37	492	42	496	61	811	111	1,310	135	1,796	436	5,145	250	3,325	55	649	39	519
N/O Hayden Ave	470	5,546	300	3,990	426	5,027	372	4,948	623	7,351	502	6,677	672	7,930	619	8,233	519	6,124	416	5,533
N/O Wyoming Ave	468	5,522	296	3,937	499	5,888	340	4,522	674	7,953	499	6,637	822	9,700	847	11,265	668	7,882	522	6,943
N/O Lancaster Ave	532	6,278	343	4,562	635	7,493	435	5,786	957	11,293	671	8,924	1,149	13,558	941	12,515	957	11,293	552	7,342
N/O Nagel Lane	349	4,118	220	2,926	392	4,626	279	3,711	460	5,428	380	5,054	630	7,434	377	5,014	385	4,543	284	3,777
N/O Boekel Rd	396	4,673	260	3,458	434	5,121	294	3,910	581	6,856	422	5,613	726	8,567	689	9,164	428	5,050	346	4,602
S/O SH 53	222	2,620	171	2,274	243	2,867	191	2,540	290	3,422	245	3,259	374	4,413	305	4,057	184	2,171	210	2,793
Average	277	3,270	266	2,437	312	3,683	222	2,956	412	4,866	320	4,262	653	7,700	522	6,947	375	4,425	279	3,715

Note: Estimated ADT based on 2005 Spokane/Kootenai County Household Travel Survey, Page 22, 5:00 p.m. AVG (PM PK HR *11.8) AM PK HR * 13.3

Table 15 - PM PK HR Model Volumes & Estimated ADT Along East-West Roadways

Model Volumes & Estimated ADT Along East-West Roadways

INTERSECTION	2010 MODEL PM PK HR	2010 BASE EST. PM PK HR ADT	2010 MODEL AM PK HR	2010 BASE EST. AM PK HR ADT	2014 BUILD MODEL PM PK HR	2014 BUILD EST. PM PK HR ADT	2014 BUILD MODEL AM PK HR	2014 BUILD EST. AM PK HR ADT	2020 MODEL PM PK HR	2020 BASE EST. PM PK HR ADT	2020 MODEL AM PK HR	2020 BASE EST. AM PK HR ADT	2035 NO-BUILD MODEL PM PK HR	2035 NO-BUILD EST. PM PK HR ADT	2035 NO-BUILD MODEL AM PK HR	2035 NO-BUILD EST. AM PK HR ADT	2035 BUILD MODEL PM PK HR	2035 BUILD EST. PM PK HR ADT	2035 BUILD MODEL AM PK HR	2035 BUILD EST. AM PK HR ADT
Mullan Ave W/O Meyer Rd	72	850	54	718	87	1,027	62	825	163	1,923	118	1,569	476	5,617	368	4,894	628	7,410	320	4,256
Mullan Ave W/O SH 41	589	6,950	430	5,719	682	8,048	504	6,703	907	10,703	634	8,432	1,262	14,892	1,086	14,444	1,567	18,491	1,088	14,470
Mullan Ave W/O Cecil Rd	267	3,151	182	2,421	264	3,115	196	2,607	333	3,929	200	2,660	580	6,844	378	5,027	833	9,829	485	6,451
Mullan Ave W/O Greensferry Rd	606	7,151	379	5,041	698	8,236	465	6,185	560	6,608	385	5,121	1,485	17,523	1,179	15,681	1,172	13,830	867	11,531
Mullan Ave Average	384	4,525	261	3,475	433	5,106	307	4,080	491	5,791	334	4,446	951	11,219	753	10,012	1,050	12,390	690	9,177
12th Ave W/O SH 41	82	968	60	798	77	909	54	718	201	2,372	90	1,197	528	6,230	151	2,008	112	1,322	37	492
12th Ave W/O Cecil Rd	75	885	49	652	85	1,003	49	652	299	3,528	124	1,649	311	3,670	113	1,503	132	1,558	25	333
12th Ave W/O Greensferry Rd	145	1,711	125	1,663	139	1,640	135	1,796	302	3,564	232	3,086	691	8,154	500	6,650	434	5,121	362	4,815
12th Ave Average	101	1,188	78	1,037	100	1,184	79	1,055	267	3,155	149	1,977	510	6,018	255	3,387	226	2,667	141	1,880
16th Ave W/O Meyer Rd	7	83	7	93	10	118	10	133	7	83	12	160	369	4,354	198	2,633	49	578	9	120
16th Ave W/O SH 41	111	1,310	194	2,580	154	1,817	238	3,165	222	2,620	206	2,740	360	4,248	346	4,602	542	6,396	382	5,081
16th Ave W/O Cecil Rd	96	1,133	77	1,024	127	1,499	86	1,144	198	2,336	92	1,224	371	4,378	233	3,099	132	1,558	25	333
16th Ave W/O Greensferry Rd	173	2,041	211	2,806	295	3,481	315	4,190	299	3,528	249	3,312	614	7,245	574	7,634	434	5,121	361	4,801
16th Ave Average	97	1,142	122	1,626	147	1,729	162	2,158	182	2,142	140	1,859	429	5,056	338	4,492	289	3,413	194	2,584
Poleline Ave W/O Meyer Rd	294	3,469	250	3,325	485	5,723	375	4,988	843	9,947	634	8,432	1,082	12,768	872	11,598	2,291	27,034	1,643	21,852
Poleline Ave W/O SH 41	339	4,000	374	4,974	431	5,086	360	4,788	453	5,345	416	5,533	907	10,703	834	11,092	1,355	15,989	1,075	14,298
Poleline Ave W/O Cecil Rd	479	5,652	403	5,360	555	6,549	408	5,426	422	4,980	271	3,604	971	11,458	821	10,919	1,021	12,048	690	9,177
Poleline Ave W/O Greensferry Rd	474	5,593	378	5,027	600	7,080	465	6,185	786	9,275	618	8,219	893	10,537	764	10,161	1,035	12,213	794	10,560
Poleline Ave Average	397	4,679	351	4,672	518	6,109	402	5,347	626	7,387	485	6,447	963	11,366	823	10,943	1,426	16,821	1,051	13,972
Prairie Ave W/O Meyer Rd	1,222	14,420	841	11,185	1,479	17,452	1,106	14,710	2,091	24,674	1,517	20,176	1,962	23,152	1,627	21,639	1,885	22,243	1,570	20,881
Prairie Ave W/O SH 41	673	7,941	556	7,395	764	9,015	609	8,100	1,035	12,213	829	11,026	1,207	14,243	943	12,542	1,617	19,081	1,337	17,782
Prairie Ave W/O W 1/2 mile Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,412	16,662	1,041	13,845	1,642	19,376	1,218	16,199
Prairie Ave W/O Greensferry Rd	474	5,593	557	7,408	669	7,894	561	7,461	929	10,962	735	9,776	1,206	14,231	911	12,116	1,474	17,393	1,184	15,747
Prairie Ave Average	592	6,989	489	6,497	728	8,590	569	7,568	1,014	11,962	770	10,244	1,447	17,072	1,131	15,036	1,655	19,523	1,327	17,652
Hayden Ave W/O Meyer Rd	1,115	13,157	954	12,688	710	8,378	598	7,953	868	10,242	751	9,988	866	10,219	799	10,627	1,606	18,951	1,277	16,984
Hayden Ave W/O SH 41	444	5,239	341	4,535	529	6,242	411	5,466	656	7,741	521	6,929	772	9,110	720	9,576	703	8,295	516	6,863
Hayden Ave W/O W 1/2 mile Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	740	8,732	1,390	18,487	684	8,071	503	6,690
Hayden Ave W/O Greensferry Rd	291	3,434	246	3,272	370	4,366	280	3,724	523	6,171	417	5,546	881	10,396	717	9,536	721	8,508	497	6,610
Hayden Ave Average	463	5,458	385	5,124	402	4,747	322	4,286	512	6,039	422	5,616	815	9,614	907	12,056	929	10,956	698	9,287
Wyoming Ave W/O Meyer Rd	5	59	6	80	11	130	36	479	102	1,204	82	1,091	402	4,744	323	4,296	235	2,773	183	2,434
Wyoming Ave W/O SH 41	2	24	2	27	38	448	18	239	228	2,690	157	2,088	461	5,440	365	4,855	8	94	23	306
Wyoming Ave W/O Rio Grande Rd	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	460	5,428	390	5,187	11	130	34	452
Wyoming Ave W/O Greensferry Rd	5	59	4	53	33	389	28	372	49	578	39	519	170	2,006	133	1,769	90	1,062	73	971
Wyoming Ave Average	4	35	3	40	21	242	21	273	126	1,118	70	924	373	4,404	303	4,027	86	1,015	78	1,041
Lancaster Rd W/O Meyer Rd	84	991	75	998	153	1,805	130	1,729	204	2,407	107	1,423	552	6,514	379	5,041	487	5,747	368	4,894
Lancaster Rd W/O SH 41	15	177	12	160	_	_	_	_	2	24	2	27	527	6,219	406	5,400	119	1,404	42	559
Lancaster Rd W/O Greensferry Rd	N/A	N/A	_	N/A	N/A	N/A	_	_	N/A	N/A	_	N/A	N/A	_	N/A	_	151	1,782	57	758
Lancaster Rd Average	50	584	44	579	77	903	65	865	103	1,215	55	725	540	4,244	393	3,480	379	2,978	234	2,070
Nagel Lane W/O Meyer Rd	45	531	17	226	75	885	47	625	207	2,443	101	1,343	554	6,537	217	2,886	224	2,643	94	1,250
Nagel Lane W/O Ratcliff	85	1,003	63	838	100	1,180	52	692	179	2,112	75	998	606	7,151	290	3,857	222	2,620	115	1,530
Nagel Lane Ave W/O SH 41	332	3,918	282	3,751	391	4,614	308	4,096	386	4,555	304	4,043	826	9,747	728	9,682	774	9,133	624	8,299
Nagel Lane Average	154	1,817	121	1,605	189	2,226	136	1,804	257	3,037	160	2,128	662	7,812	412	5,475	407	4,799	278	3,693
Boekel Rd W/O Meyer Rd	233	2,749	195	2,594	346	4,083	264	3,511	627	7,399	516	6,863	605	7,139	652	8,672	768	9,062	561	7,461
Boekel Rd W/O Ratcliff	233	2,749	190	2,527	263	3,103	214	2,846	364	4,295	346	4,602	553	6,525	490	6,517	288	3,398	223	2,966
Boekel Rd W/O SH 41	14	165	5	67	86	1,015	77	1,024	265	3,127	215	2,860	461	5,440	303	4,030	283	3,339	281	3,737
Boekel Rd Average	120	1,888	130	1,729	232	2,734	185	2,461	314	4,940	359	4,775	540	6,368	482	6,406	446	5,267	355	4,722

Note: Estimated ADT based on 2005 Spokane/Kootenai County Household Travel Survey, Page 22, 5:00 p.m. AVG (PM PK HR *11.8) AM PK HR * 13.3

CHAPTER 3 - BACKAGE ROADS ANALYSIS

Secondary "Backage"/Access Roads

A network of secondary access roads is proposed as part of the plan to provide access to future development along and adjacent to SH 41. "Backage" roads would consist of collector roadways running parallel to both sides of SH 41 at ¼ mile and ½ mile spacing between 12th Avenue and the City of Rathdrum. The quarter-mile and half mile backage roads would be designated as collector or "local streets" and would provide private access along the backage road corridor. Access to SH 41 would be provided at designated east west arterials at designated locations.

Half-mile backage roads would run from Horse haven/20th Ave. on the east side of the highway and from Mullan Ave. on the west side to Rathdrum. The east/west arterials would connect the "Backage" roads with Highway 41 and would be located approximately every 1/2 mile between Poleline and Lancaster Ave.

Access to Highway 41 is expected to be access controlled. Connectivity of the proposed adjacent roadways would also be restricted in the vicinity of the Union Pacific railroad tracks to limit uncontrolled crossings of the rail lines. Future potential abandonment of the rail line would allow for the completion of the roadways for cross-prairie access. The backage roads are thought to be piece constructed between 2020 and 2035, but are currently dependent upon developer driven projects, due to funding at this time.

The primary purpose of the backage roads are to provide local access to growth and development and provide an alternative route for local traffic away from SH 41.

Questions arose from the KCATT committee regarding how important backage roads were to the operation of the overall roadway system as well as the appropriate timing and sequencing their improvements and those on SH 41.

Travel demand model scenarios were developed to look at the impact of the backage roads and whether or not a greater emphasis should be placed on developing the backage roads first, before making improvements to SH 41 or whether, it would be imperative to make the improvements to SH 41 before adding the backage roads?

Building the ¼ mile and ½ mile spaced backage roads shifts traffic patterns within the corridor enabling vehicles to travel from and to along the backage roads so traffic can increase or decrease along those traveled paths scenarios. Depending on roadway demand, roadways will be designed to provide the shortest and fastest path to arrive at the traveler's destination.

When looking at the 2035 travel demand volumes, backage roads have fairly low volumes with an average of 261 cars/day for the ¼ mile and 359 cars/day for the ½ mile backage roads. Backage roads draw local traffic and do have an effect on other roadways in the vicinity. The Huetter bypass project and other planned roadway improvements to SH 41 also have an effect on the modeling results. The volumes on the following pages show the impact of the different scenarios (conditions) on the; SH-41 highway system, ¼ mile backage roads, ½ mile backage roads, Meyer Rd., Mullan Ave., Poleline Ave., Prairie Ave., Hayden Ave., Hayden Ave. and Lancaster Rd.

Summary of Findings from the Backage Road Scenario Analysis

The purpose of the scenarios is to provide a preliminary look at the backage roads and their impact on traffic volumes and travel patterns in the regional model. The SH-41 corridor Synchro software analysis (provided later in the chapter) provides more detailed operational data and recommendations for levels of service as well as potential implementation strategies.

Scenario 1 ~
Base ~ 2035 Build out with No Backage Roads

If no backage roads are built compared to the 2035 build model, the most significant impacts on traffic volumes show a decrease along Hayden Ave. of 4214 cars/day, a decrease of 2043 cars/day along Lancaster Ave. and an increase of traffic along Poleline Ave. of 2075 cars/day. Increases/decreases in volumes on the other main arterials in the corridor are as follows:

Poleline Ave.	=	+2075 cars/day
Mullan Ave.	=	+ 628 cars/day
Meyer Rd.	=	+ 482 cars/day
Hayden Ave.	=	- 4214 cars/day
Lancaster Rd.	=	- 2043 cars/day
Greensferry Rd.	=	- 788 cars/day
Prairie Ave.	=	- 385 cars/day
SH-41	=	- 381 cars/day

Scenario 2 ~
2035 SH-41 Build Model
No Huetter Corridor, No Backage Roads

If no ¼ mile or ½ mile backage roads or Huetter bypass project are built compared to the 2035 SH-41 build model, nearly all of the traffic volumes increase. The most significant impacts on traffic volumes show a increases in ADT of; SH-41 3814, Greensferry Rd. 1559, Meyer Rd. 1292, Mullan Ave. 3, Poleline Ave. 3421, Prairie Ave. 361, with decreases and occurrence on Hayden Ave. of 2542 and Lancaster Rd. of 659.

Poleline Ave.	=	+3421 cars/day
Mullan Ave.	=	+ 3 cars/day
Meyer Rd.	=	+1292 cars/day
Hayden Ave.	=	- 2542 cars/day
Lancaster Rd.	=	- 659 cars/day
Greensferry Rd.	=	+1559 cars/day
Prairie Ave.	=	+ 361 cars/day
SH-41	=	+3814 cars/day

Scenario 3 ~
2035 Build Only ¼ mile Backage Roads

When comparing the ¼ mile backage roads only to the ½ mile backage roads only, the ½ mile backage road (848 ADT) attracts slightly more volumes than the ¼ mile backage roads (836 ADT) and also reduces more volumes along other roadways. These scenarios did not include improvements to SH-41 or the Huetter bypass to show only the effects of the backage roads on the rest of the roadway system.

Poleline Ave.	=	+1537 cars/day
Hayden Ave.	=	+ 386 cars/day
Prairie Ave.	=	- 2042 cars/day

Meyer Rd.	= -	349 cars/day
Lancaster Rd.	= -	300 cars/day
Mullan Ave.	= -	148 cars/day
Greensferry Rd.	= -	138 cars/day
SH-41	= -	117 cars/day

Scenario 4 ~
2035 Build Only ½ mile Backage Roads

When comparing the ½ mile backage roads only to the ¼ mile backage roads only, the ½ mile backage road (848 ADT) attracts slightly more volumes than the ¼ mile backage roads (836 ADT) and also reduces more volumes along other roadways. These scenarios did not include improvements to SH-41 or the Huetter bypass to show only the effects of the backage roads on the rest of the roadway system.

Poleline Ave.	=	- 1537 cars/day
Hayden Ave.	=	- 386 cars/day
Prairie Ave.	=	+ 2042 cars/day
Meyer Rd.	=	+ 349 cars/day
Lancaster Rd.	=	+ 300 cars/day
Mullan Ave.	=	+ 148 cars/day
Greensferry Rd.	=	+ 138 cars/day
SH-41	=	+ 117 cars/day

Scenario 5 ~
2035 Build Out SH-41, Backage Roads with No Huetter Bypass Corridor

If the ¼ and ½ mile backage roads are not built and no improvements are made to SH-41 in the 2035 forecast model the most significant impacts on traffic volumes show an increase along Prairie Ave. by approximately 4877 cars/day, along SH-41 by approximately 3536 cars/day, along Lancaster Rd. by approximately 2502 cars/day (when compared to the build model), other volumes increase or decrease along the other main arterials as follows:

Prairie Ave.	=	+ 4877 cars/day
SH-41	=	+ 3536 cars/day
Hayden Ave.	=	+ 2741 cars/day
Greensferry Rd.	=	+ 1931 cars/day
Hayden Ave.	=	+ 291 cars/day
Mullan Ave.	=	- 751 cars/day
Meyer Rd.	=	- 534 cars/day
Lancaster Rd.	=	- 346 cars/day

Scenario 6 ~
2035 Build, Backage Roads with No Improvements to SH-41

By building the ¼ and ½ mile backage roads with no improvements to SH-41 in the 2035 forecast model, the most significant impacts on traffic volumes show a decrease along SH-41 by approximately 4287 cars/day. Lancaster Rd. decreases by approximately 2502 cars/day (when compared to the build model),

Hayden Ave. increases by 2741 cars/day and volumes increase along nearly every other main arterial, as follows:

Hayden Ave.	=	+ 2741 cars/day
Meyer Rd.	=	+ 876 cars/day
Prairie Ave.	=	+ 823 cars/day
Greensferry Rd.	=	+ 696 cars/day
¼ Mile Backage Rd.	=	+ 683 cars/day

½ mile backage Rd.	=	+ 79	cars/day
Poleline Ave.	=	+ 25	cars/day
SH-41	=	- 4287	cars/day
Lancaster Rd.	=	- 2502	cars/day

Scenario Analysis Recommendations

- The ½ mile backage roads have somewhat higher daily traffic volumes than the ¼ backage roads in the 2035 forecast year.

- The analysis indicates it would be better to build the ½ mile backage roads first, then the ¼ mile backage roads, if the project were to be phased for construction.

- With improvements to SH 41 the traffic increases along SH-41 by approximately +4287 cars/day in the 2035 and the V/C ratios are above 75% at some intersections. Making improvements to SH 41 increases traffic along SH 41 and Lancaster Ave.(2502) however, it lowers volumes on the other main arterials within the corridor, along Hayden Ave. (2741), along Meyer Rd. (876), along Prairie Ave. (823), along Greensferry Rd. (696), and along Mullan Ave. (558 ADT).

- The Huetter bypass project and improvements to SH 41 have the most significant impact on the entire roadway system. By building the Huetter bypass project, making improvements to SH 41 and building the backage roads in the 2035 out year is the best overall solution to helping to improve regional congestion, safety and traffic flow within Kootenai County.

The scenario plots for the traffic volumes and volume to capacity ratio's used for the analysis are shown on the subsequent pages:

Figure 23 - Backage Roads - Scenario's

2035 SH 41 Travel Demand Model Backage Road Scenarios Analysis

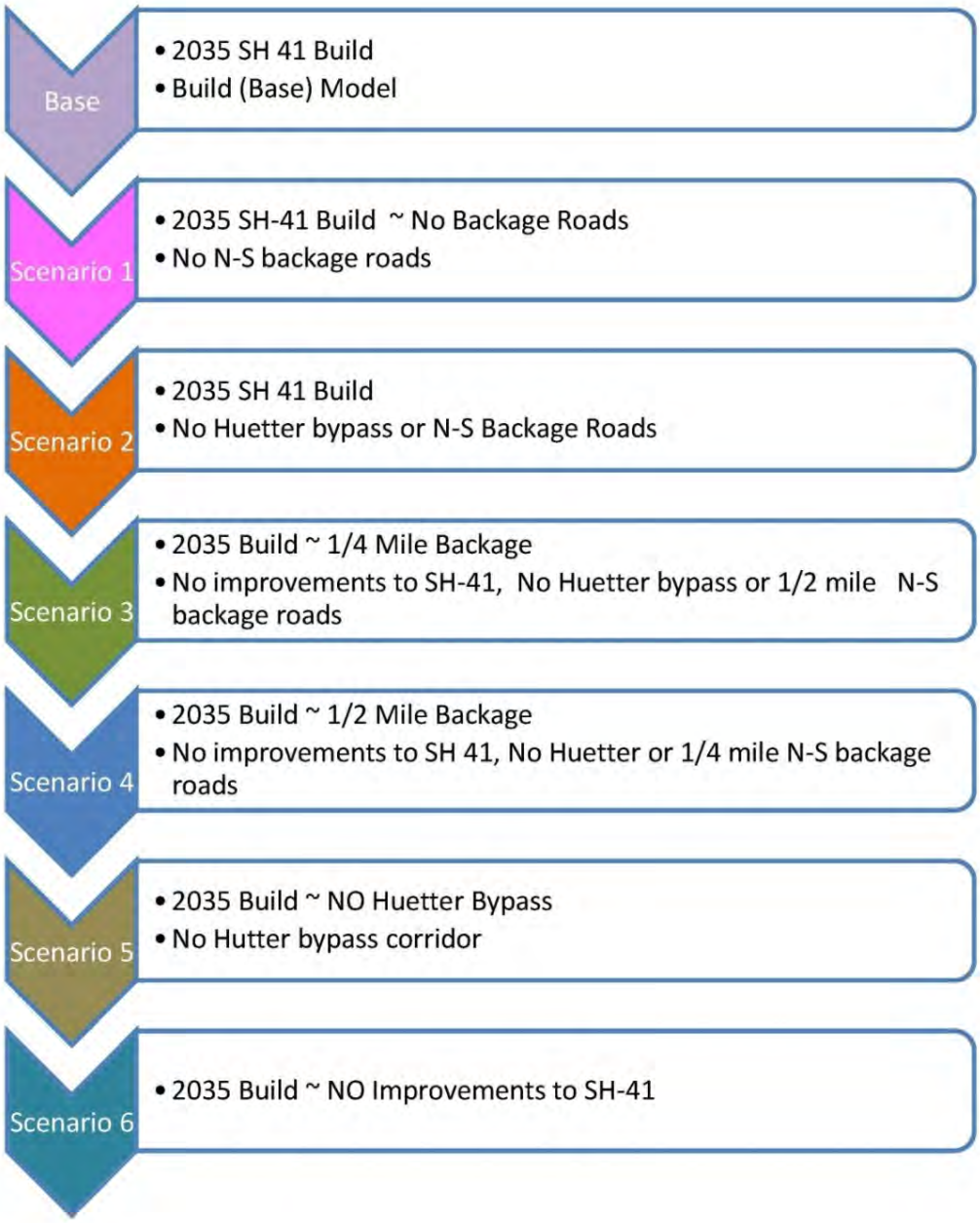


Figure 24 - Backage Roads Location Map

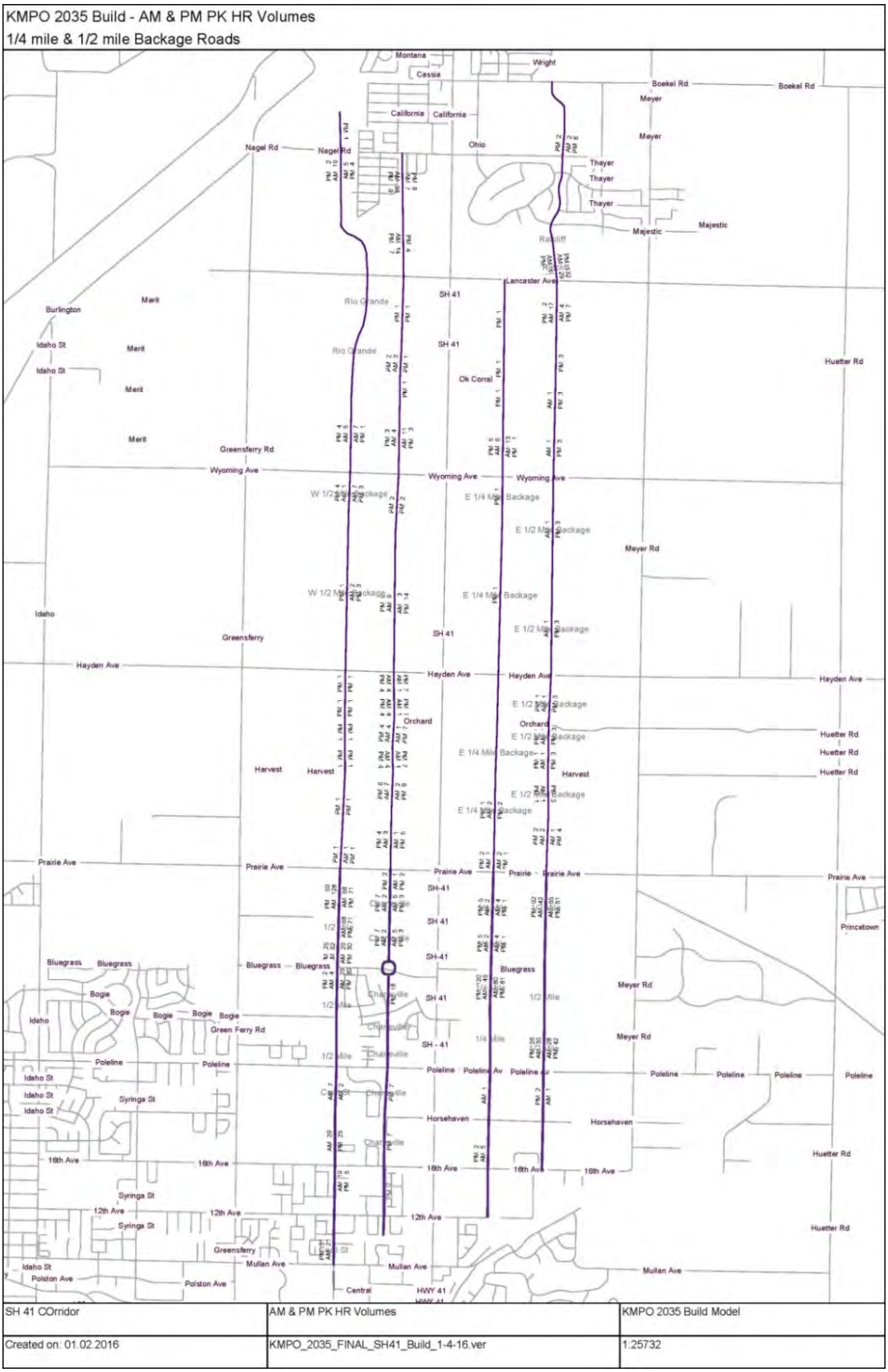


Table 16 - 2035 PM PK HR & Calculated AWDT Volumes – Backage Roads Scenario Analysis

SCENARIO #	MODEL SCENARIO	PRIMARY FOCUS	CONDITIONS	AVG PM PK HR VOLUME	CALC'D AWDT
BASE	2035 SH 41 Final BUILD Model	Along SH 41	Build	1608	18,978
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along SH 41	Build , No Backage Roads	1576	18,597
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along SH 41	Build , No Huetter bypass, No Backage Roads	1932	22,792
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along SH 41	Build, No SH 41 Imp. No Huetter bypass	1396	16,479
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along SH 41	Build, No SH 41 Imp. No Huetter bypass	1387	16,362
5	2035 SH 41 Final Build, NO Huetter Pypass	Along SH 41	Build, NO Huetter Bypass	1908	22,514
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along SH 41	Build , No Improvements to SH-41	1245	14,691
BASE	2035 SH 41 Final BUILD Model	1/4 Mile Backage Roads	Build	22	261
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along 1/4 Mile Backage Rds	Build , No Improvements to SH-41	80	944
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	1/4 Mile Backage Rd Roads	Build, No SH 41 Imp. No Huetter bypass	71	836
BASE	2035 SH 41 Final BUILD Model	1/2 Mile Backage Roads	Build	30	359
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	1/2 Mile Backage Rd Roads	Build, No SH 41 Imp. No Huetter bypass	72	848
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along 1/2 Mile Backage Rds	Build , No Improvements to SH-41	37	438
BASE	2035 SH 41 Final BUILD Model	Along Greensferry Rd	Build	955	11,269
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Greensferry Rd	Build , No Backage Roads	949	10,841
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Greensferry Rd	Build , No Huetter bypass, No Backage Roads	1088	12,828
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Greensferry Rd	Build, No SH 41 Imp. No Huetter bypass	1228	14,486
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Greensferry Rd	Build, No SH 41 Imp. No Huetter bypass	1239	14,624
5	2035 SH 41 Final BUILD Model, No Huetter bypass	Along Greensferry Rd	Build , No Huetter bypass	1119	13,200
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Greensferry Rd	Build , No Improvements to SH-41	1014	11,965

2035 PM PK HR & Calculated AWDT Volumes Backage Road Scenario Analysis – KMPO (Cont.)

BASE	2035 SH 41 Final BUILD Model	Along Meyer Rd	Build	366	4,320
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Meyer Rd	Build , No Backage Roads	407	4,802
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Meyer Rd	Build , No Huetter bypass, No Backage Roads	474	5,592
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Meyer Rd	Build, No SH 41 Imp. No Huetter bypass	551	6,501
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Meyer Rd	Build, No SH 41 Imp. No Huetter bypass	521	6,151
5	2035 SH 41 Final BUILD Model, No Huetter bypass	Along Meyer Rd	Build , No Huetter bypass	411	4,854
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Meyer Rd	Build , No Improvements to SH-41	440	5,196
BASE	2035 SH 41 Final BUILD Model	Along Mullan Ave	Build	785	9,263
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Mullan Ave	Build , No Backage Roads	838	9,891
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Mullan Ave	Build , No Huetter bypass, No Backage Roads	785	9,266
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Mullan Ave	Build, No SH 41 Imp. No Huetter bypass	707	8,353
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Mullan Ave	Build, No SH 41 Imp. No Huetter bypass	704	8,305
5	2035 SH 41 Final BUILD Model, No Huetter bypass	Along Mullan Ave	Build , No Huetter bypass	721	8,512
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Mullan Ave	Build , No Improvements to SH-41	832	9,821
BASE	2035 SH 41 Final BUILD Model	Along Poleline Ave	Build	1653	19,499
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Poleline Ave	Build , No Backage Roads	1477	17,424
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Poleline Ave	Build , No Huetter bypass, No Backage Roads	1363	16,078
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Poleline Ave	Build, No SH 41 Imp. No Huetter bypass	1427	16,836
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Poleline Ave	Build, No SH 41 Imp. No Huetter bypass	1557	18,373
5	2035 SH 41 Final BUILD Model, No Huetter bypass	Along Poleline Ave	Build , No Huetter bypass	1495	17,635
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Poleline Ave	Build , No Improvements to SH-41	1655	19,524

2035 PM PK HR & Calculated AWDT Volumes Backage Road Scenario Analysis – KMPO (Cont.)

BASE	2035 SH 41 Final BUILD Model	Along Prairie Ave	Build	1819	21,463
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Prairie Ave	Build , No Backage Roads	1620	19,114
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Prairie Ave	Build , No Huetter bypass, No Backage Roads	1850	21,824
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Prairie Ave	Build, No SH 41 Imp. No Huetter bypass	2167	25,578
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Prairie Ave	Build, No SH 41 Imp. No Huetter bypass	1995	23,536
5	2035 SH 41 Final BUILD Model, No Huetter bypass	Along Prairie Ave	Build , No Huetter bypass	2232	26,340
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Prairie Ave	Build , No Improvements to SH-41	1749	20,640
BASE	2035 SH 41 Final BUILD Model	Along Hayden Ave	Build	1324	15,622
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Hayden Ave	Build , No Backage Roads	967	11,408
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Hayden Ave	Build , No Huetter bypass, No Backage Roads	1108	13,080
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Hayden Ave	Build, No SH 41 Imp. No Huetter bypass	1431	16,881
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Hayden Ave	Build, No SH 41 Imp. No Huetter bypass	1265	14,872
5	2041 SH 41 Final BUILD Model, No Huetter bypass	Along Hayden Ave	Build , No Huetter bypass	1349	15,913
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Hayden Ave	Build , No Improvements to SH-41	1092	12,881
BASE	2035 SH 41 Final BUILD Model	Along Lancaster Rd	Build	462	5,446
1	2035 SH 41 Final BUILD Model, No Backage Roads	Along Lancaster Rd	Build , No Backage Roads	288	3,403
2	2035 SH 41 Final BUILD Model - No Huetter, No Backage Roads	Along Lancaster Rd	Build , No Huetter bypass, No Backage Roads	406	4,787
3	2035 Build_1/4 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Lancaster Rd	Build, No SH 41 Imp. No Huetter bypass	326	3,850
4	2035 Build_1/2 Mile Backage Only/No SH 41 Imp/No Huetter Model	Along Lancaster Rd	Build, No SH 41 Imp. No Huetter bypass	348	4,104
5	2035 SH 41 Final BUILD Model, No Huetter bypass	Along Lancaster Rd	Build , No Huetter bypass	432	5,100
6	2035 SH 41 Final BUILD Model, No Improvements to SH-41	Along Lancaster Rd	Build , No Improvements to SH-41	250	2,944

Figure 25 - Scenario BASE - 2035 Full Build

PM Peak Hour Volumes

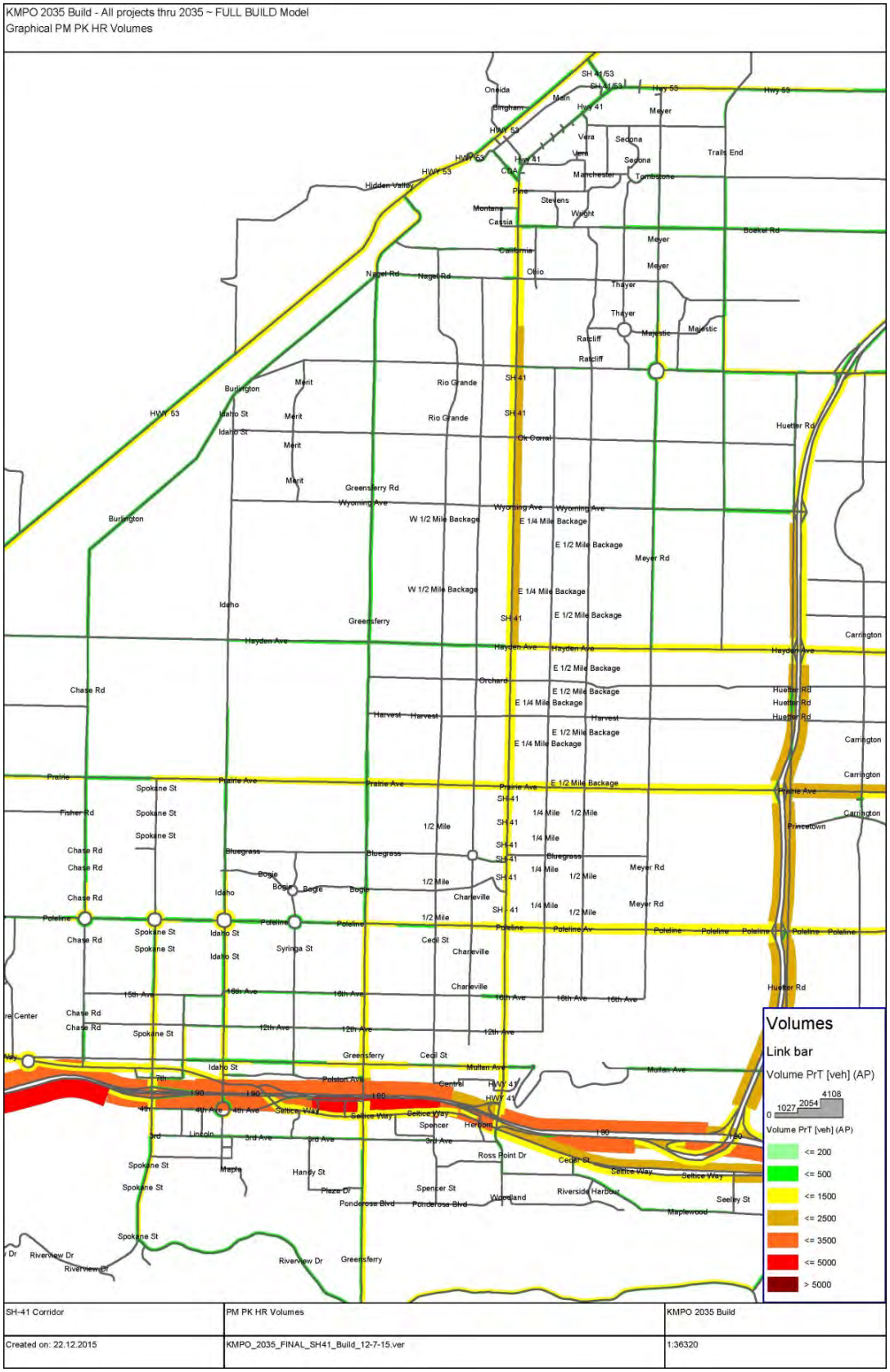


Figure 26 - Scenario #1 - 2035 Build - No Backage Roads

PM Peak Hour Volumes

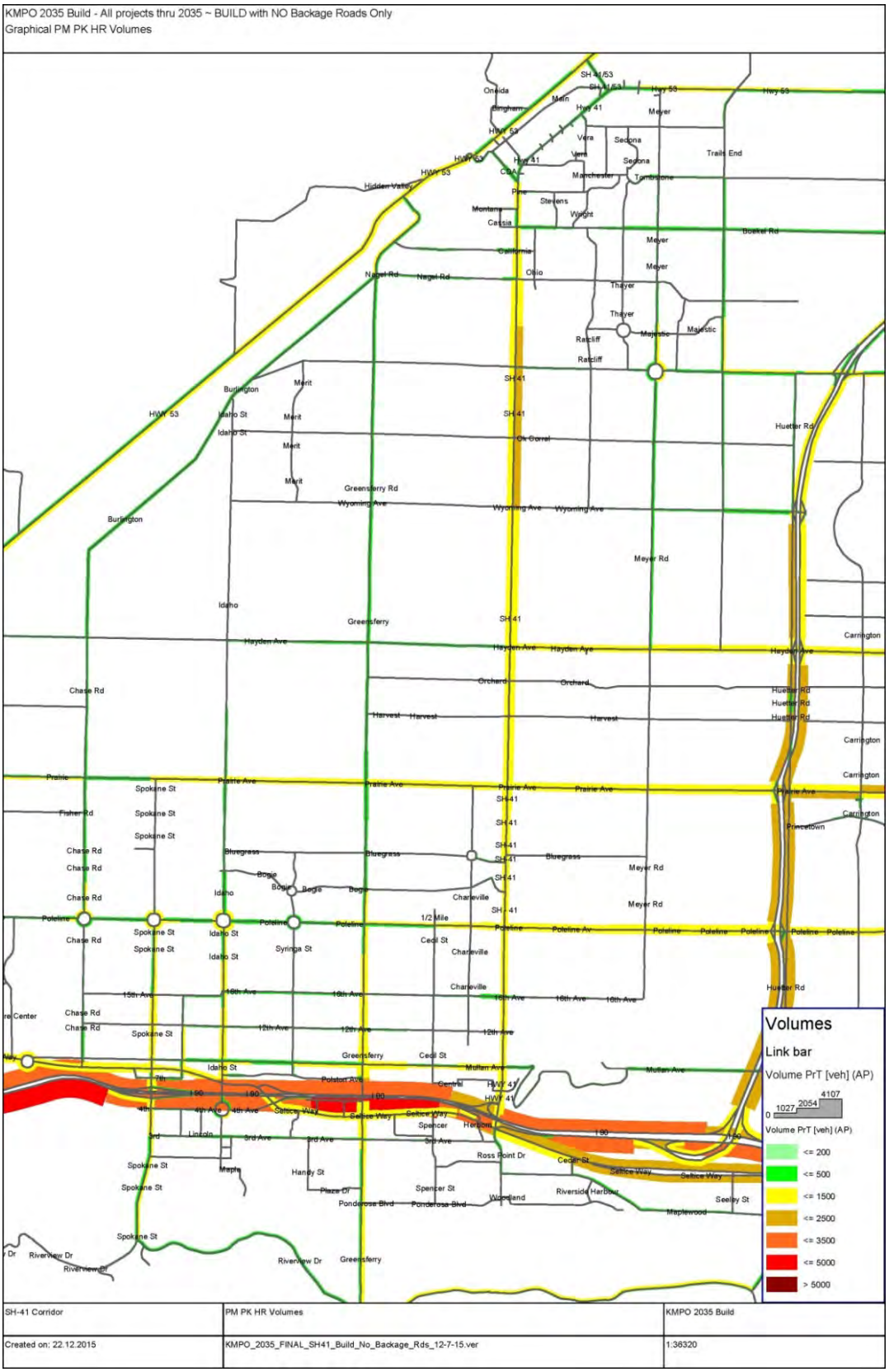


Figure 27 - Scenario #2 - No Huetter Bypass/Backage Roads

PM Peak Hour Volumes

Figure 28 - Scenario #3 - 2035 Build - 1/4 Mile Backage Roads

No Imp. to SH-41, No Huetter Bypass or ½ Mile east-west Backage Roads

PM Peak Hour Volumes

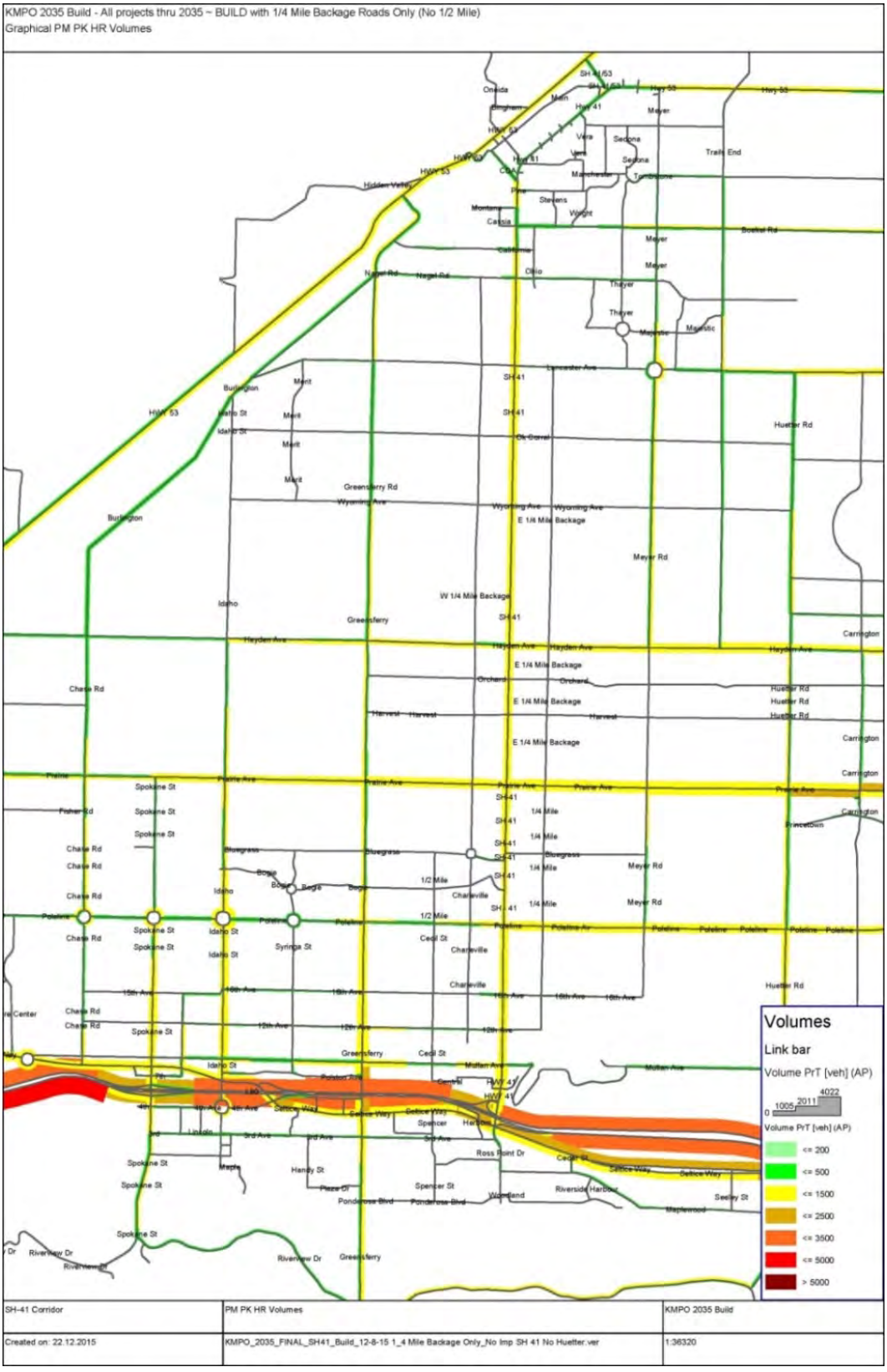


Figure 29 - Scenario #4 - 2035 Build - 1/2 Mile Backage Roads

No Improvements to SH-41, No Huetter Bypass or ¼ Mile east-west Backage Roads

PM Peak Hour Volumes

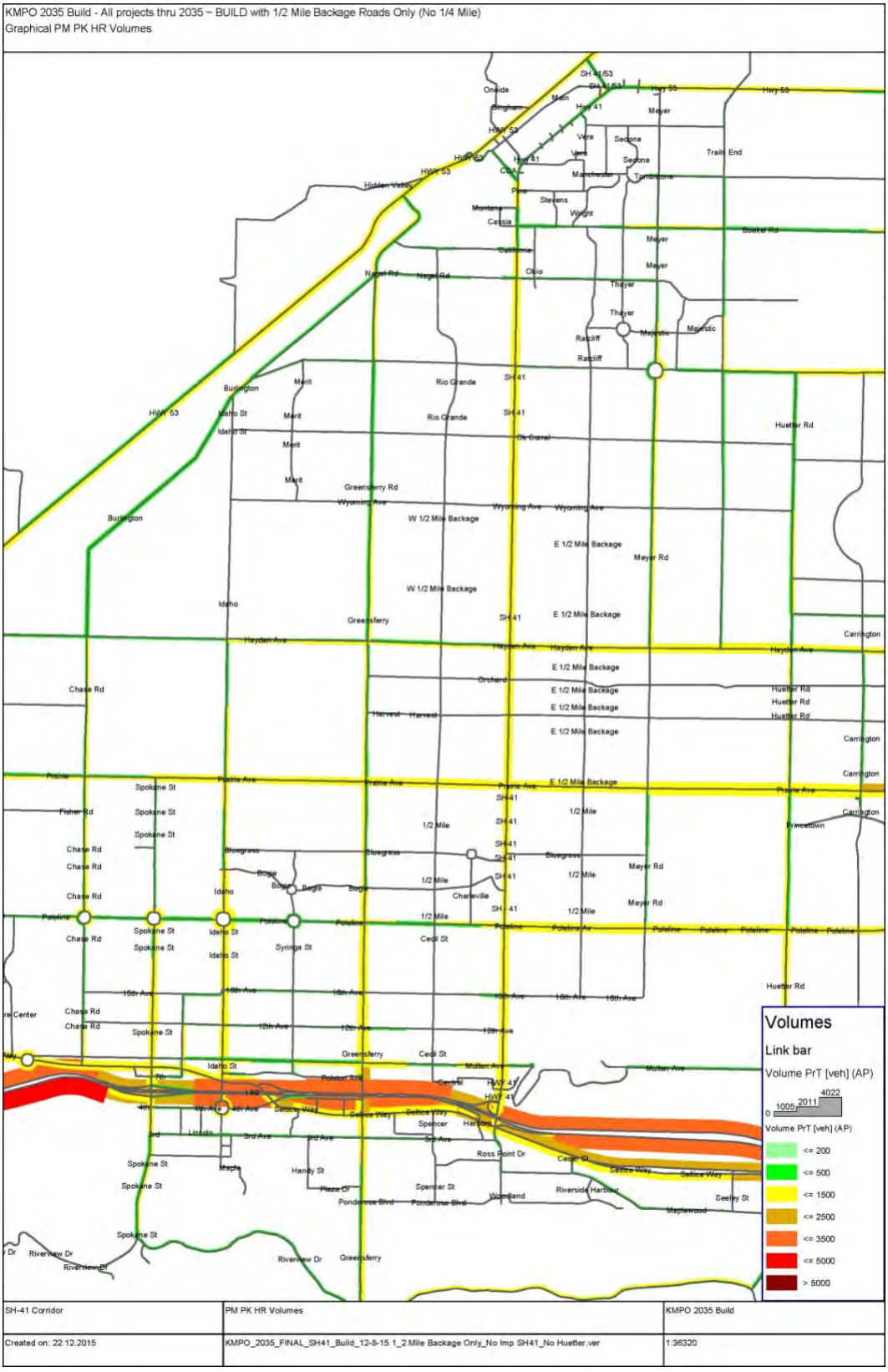


Figure 30 - Scenario #5 - 2035 Build - No Huetter Bypass

PM Peak Hour Volumes

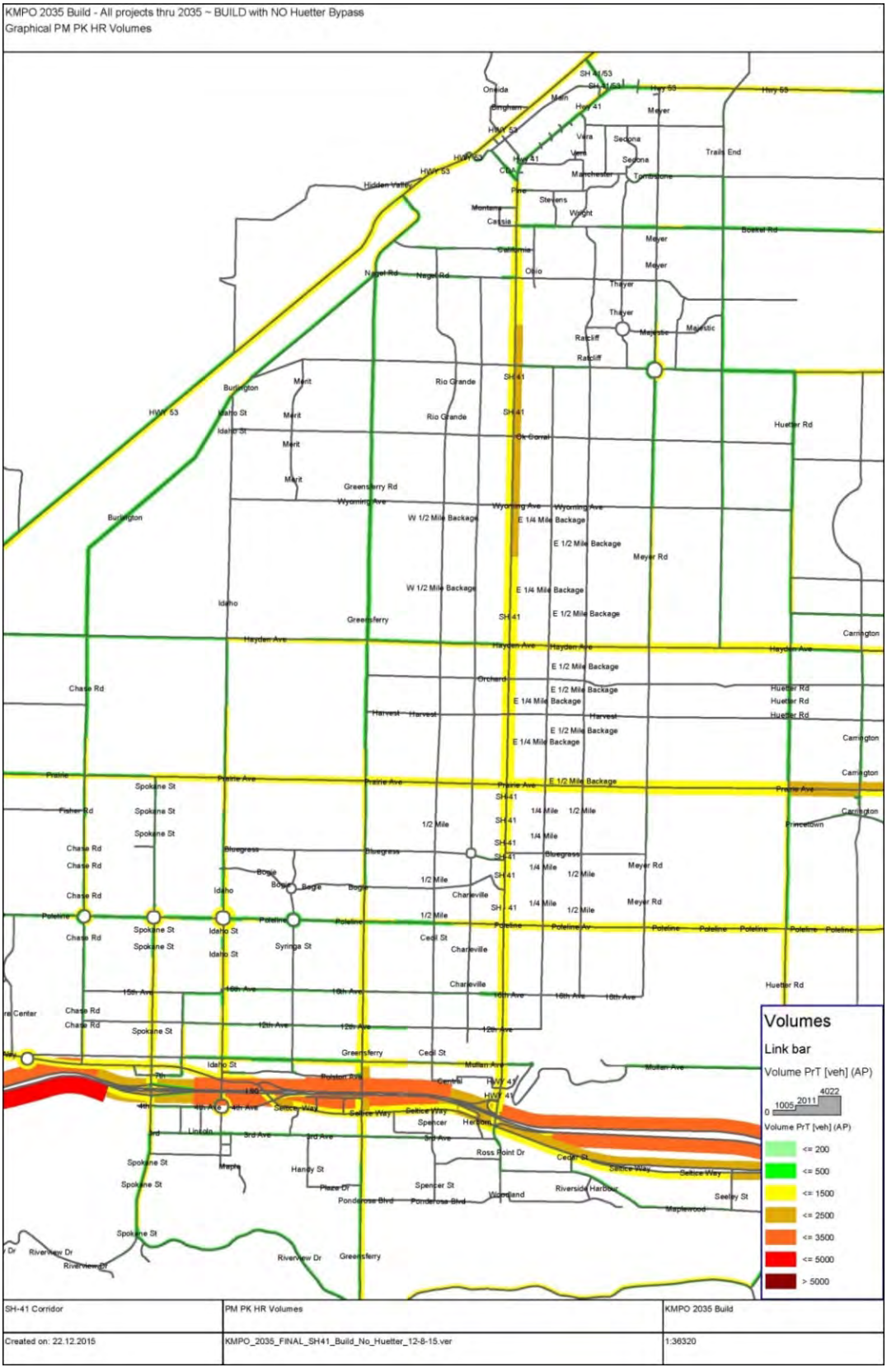


Figure 31 - Scenario #Base - 2035 Build - Volume to Capacity Plot

Base PM Peak Hour

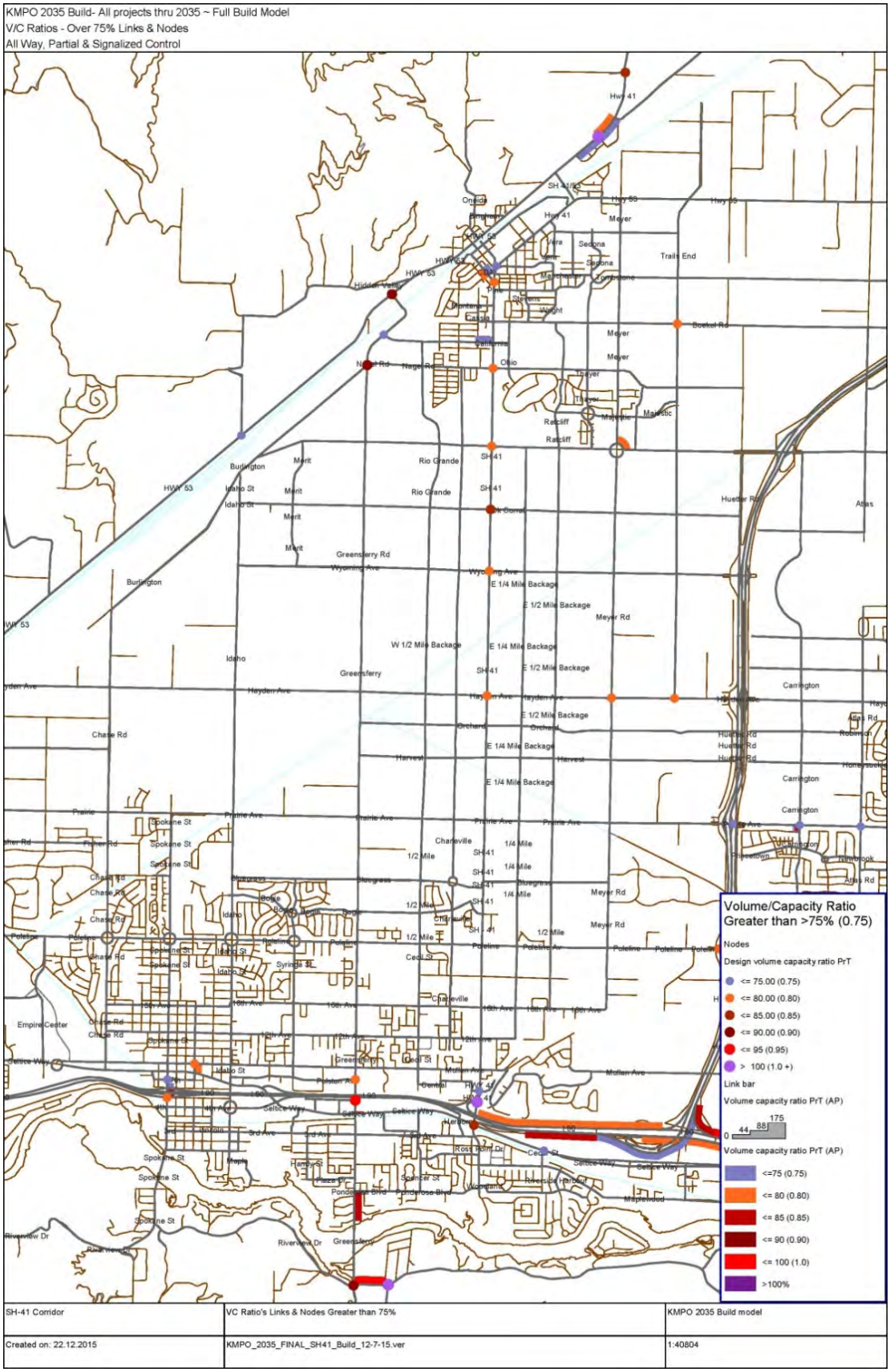


Figure 32 - Scenario 31 - 2035 Build - Volume to Capacity Plot

2035 Build ~ No Backage Roads ~ PM Peak Hour

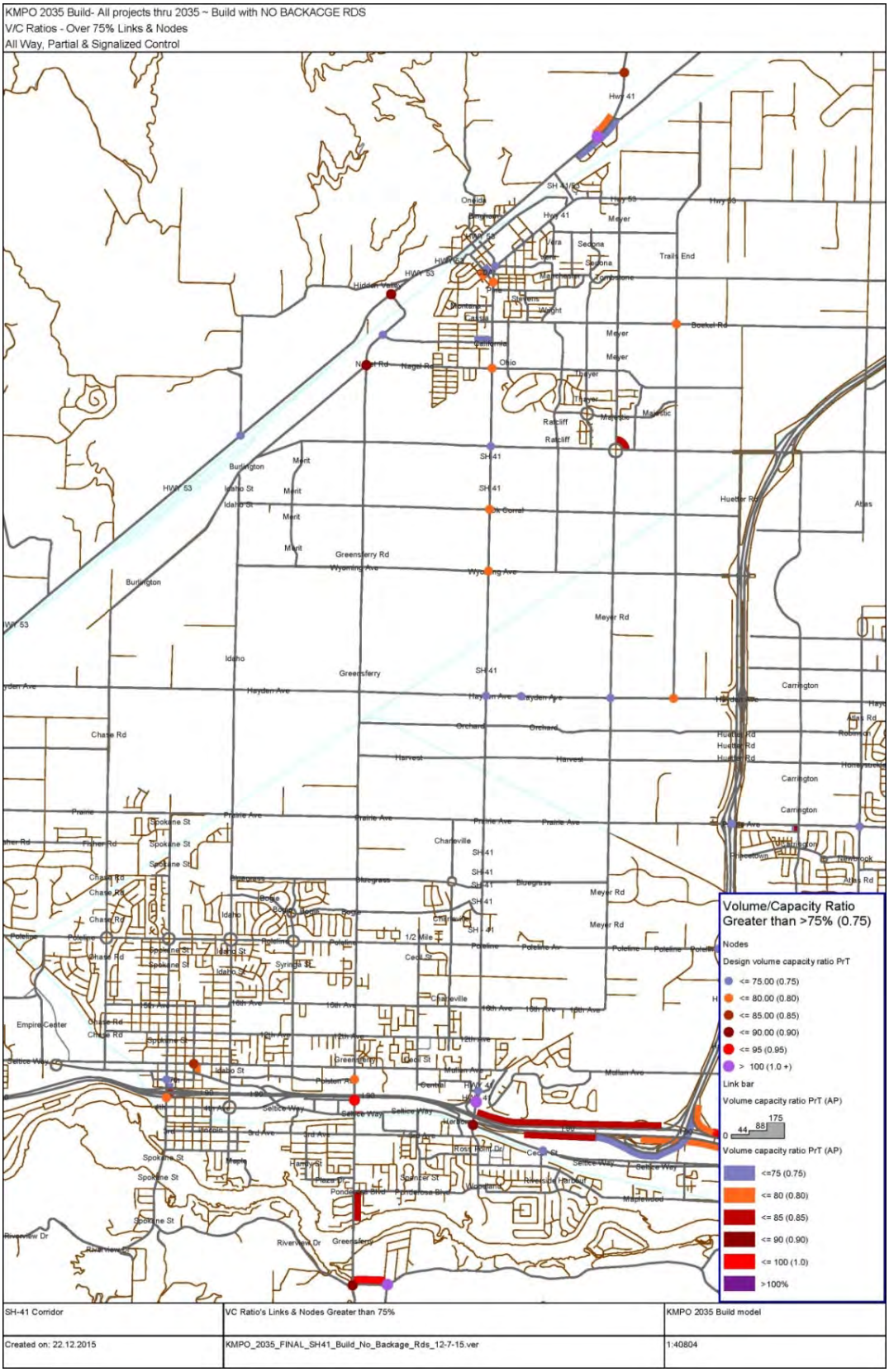


Figure 33 - Scenario #2 - 2035 Build - Volume to Capacity Plot

2035 Build ~ No Huetter Bypass or Backage Roads ~ PM Peak Hour

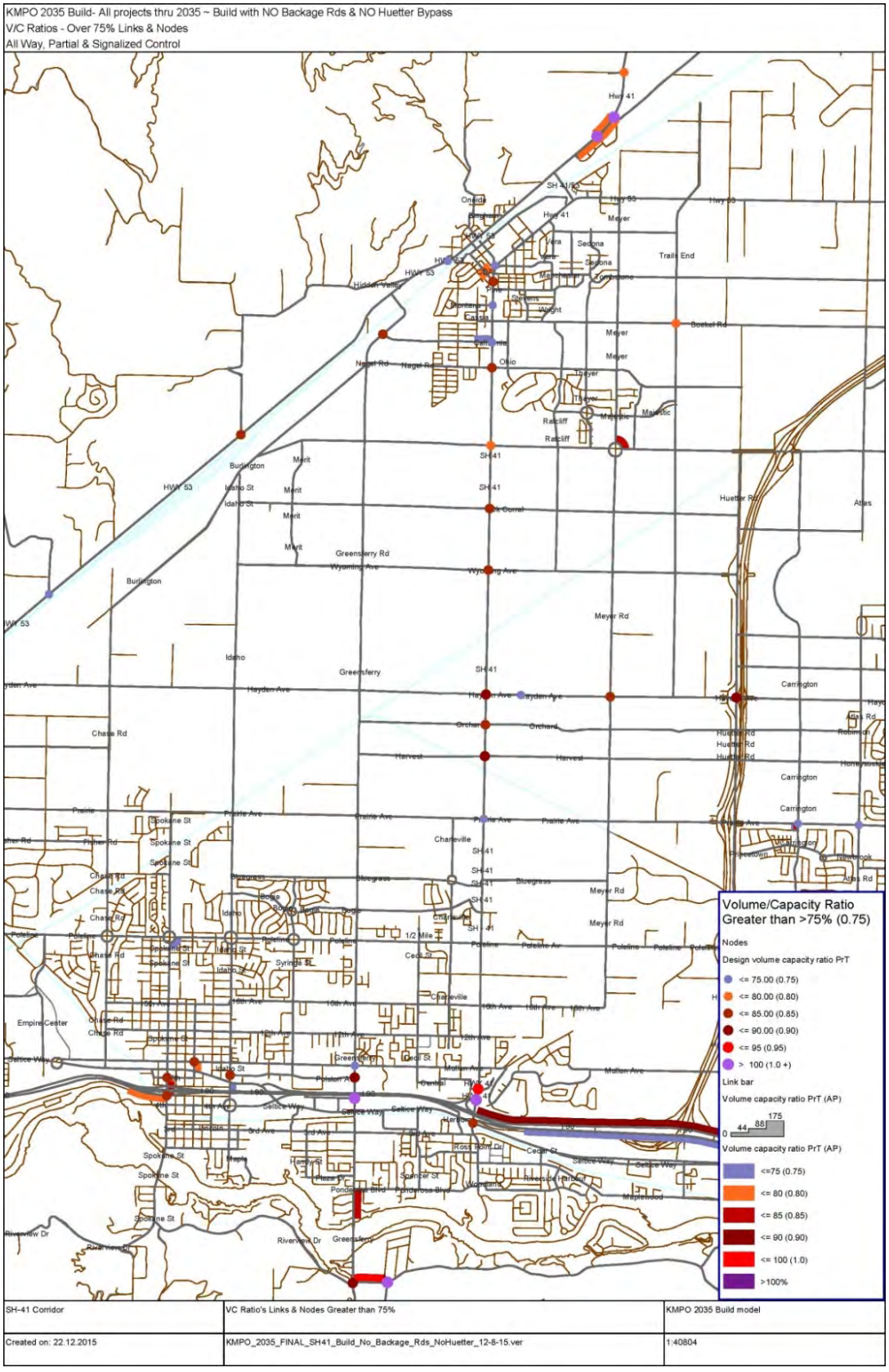


Figure 34 - Scenario #3 - 2035 Build - Volume to Capacity Plot

2035 Build w/¼ Mile Backage Roads, No Huetter Bypass or ½ Mile Backage Roads ~ PM Peak Hour

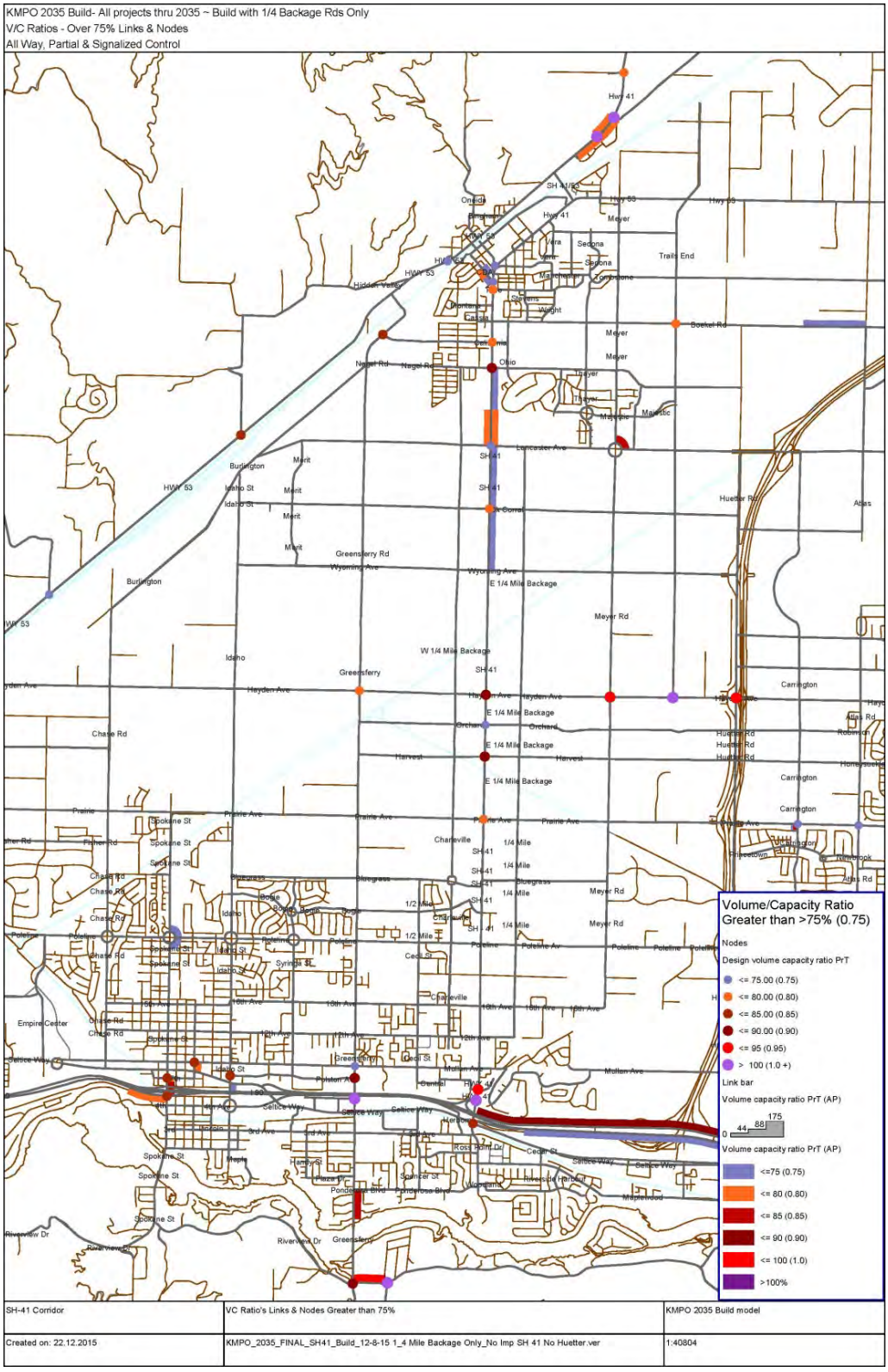


Figure 35 - Scenario #4 - 2035 Build - Volume to Capacity Plot

2035 Build w/½ Mile Backage Roads, No Huetter Bypass or ¼ Mile Backage Roads, PM Peak Hr

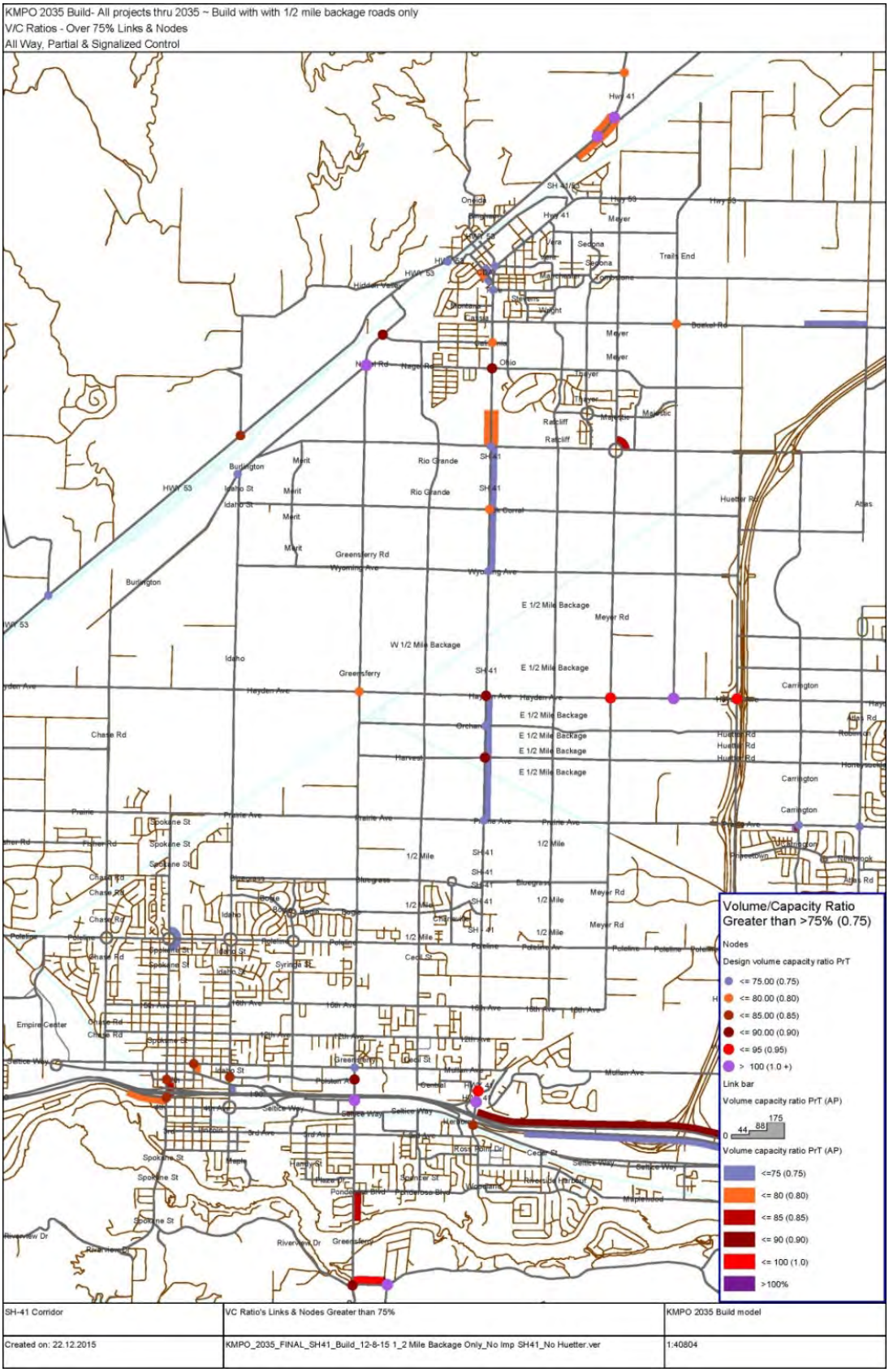


Figure 36 - Scenario #5 - 2035 Build - Volume to Capacity Plot

2035 Build PM Peak Hour No Huetter Bypass

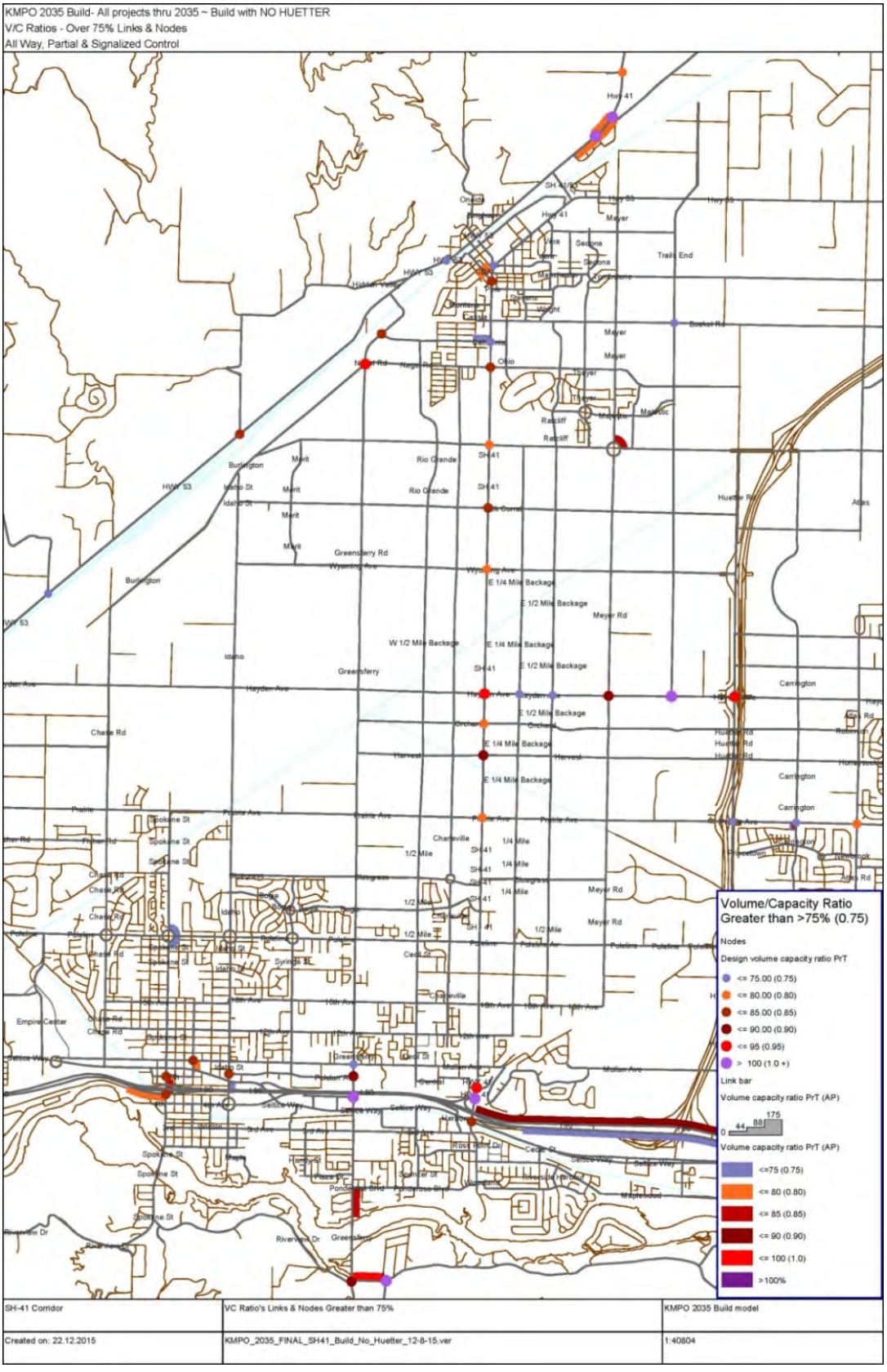
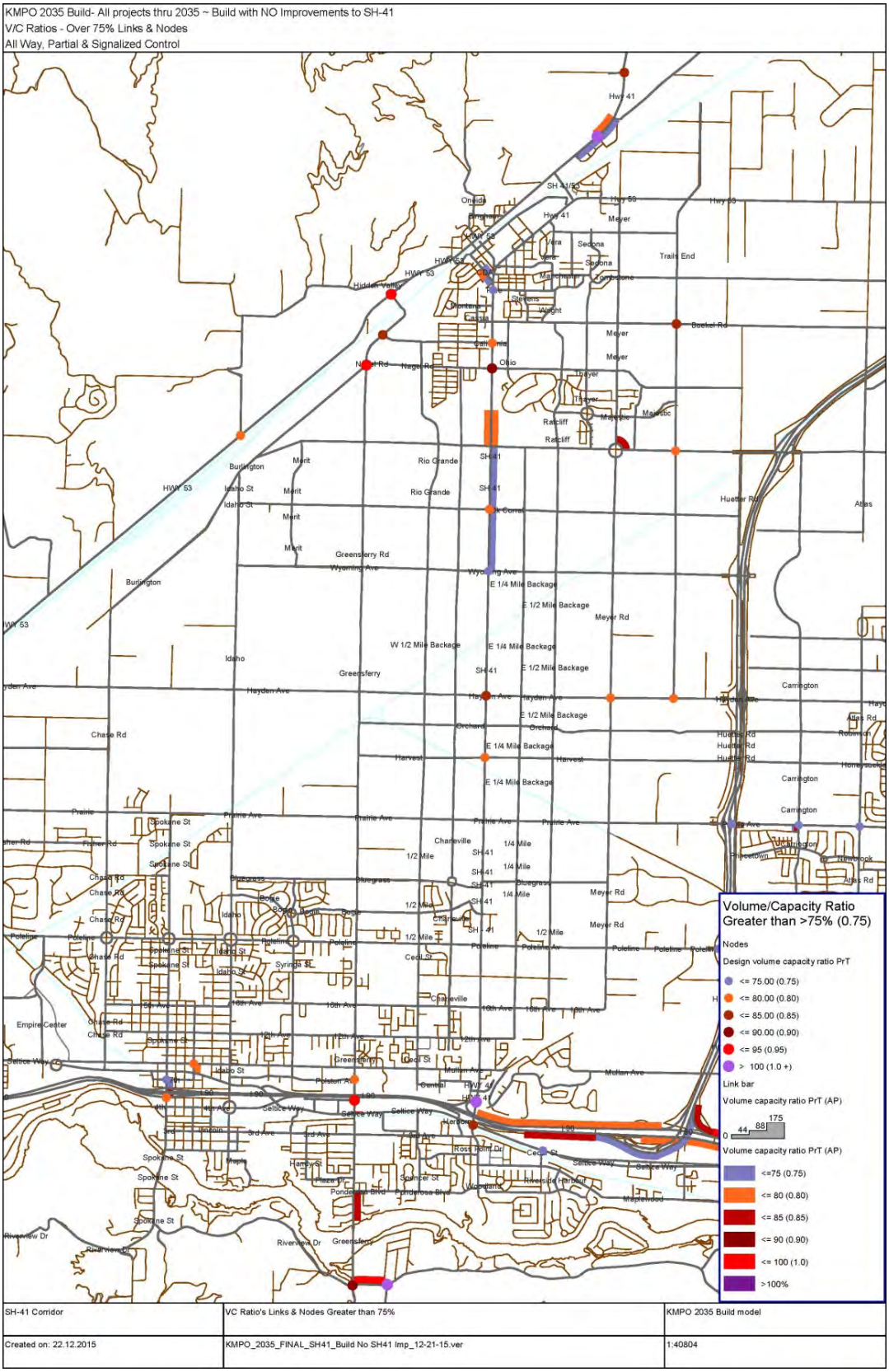


Figure 37 - Scenario #6 - 2035 Build - Volume to Capacity Plot

2035 Build ~ PM Peak Hour ~ No Improvements to SH-41



CHAPTER 4 - TRAFFIC OPERATIONS /MEASURES OF EFFECTIVENESS (MOEs) & LOS

This section discusses the methodologies used to evaluate the traffic impacts of the proposed land use alternative and level of service (LOS) and provides a summary of results / conclusions.

Roadway Improvements

A preliminary analysis of existing and future traffic conditions indicates that significant capacity improvements would have to be provided to accommodate traffic volumes generated by the proposed alternatives. A Project Team consisting of ITD, the Cities of Post Falls and Rathdrum, Kootenai County, and the Post Falls Highway District was assembled to discuss the most reasonable and financially feasible capacity projects for the Highway 41 corridor. An implementation improvement plan/approach was developed to improve the corridor and is discussed in detail later in this report.

Generally, capacity improvements would involve the widening of Highway 41 to a four-lane facility with a raised center median and access controls, the installation of additional / upgraded traffic signals at major intersections, access restrictions, construction of new off-corridor roadways, and the widening of several adjacent arterials. The Project Team agreed that these improvements would be implemented with any of the proposed land use alternatives and have been included into the updated KCATT model and reflected by the MOEs. It is important to note that traffic operations at intersections or within the corridor will be reduced from what has been highlighted by this report, if any of the proposed improvements were not constructed.

Also note that the improvements not considered by this plan, involves the improvement of Highway 41 and I-90 interchange (will include the section from Seltice Way to Mullan Avenue) as well as the section from Boekel Road to SH 53. The portion of corridor between Seltice Way and Mullan Ave. though identified for future restrictions at Neufield / Central with SH41 further analysis of this intersection will occur with ITD's future study of the I90 corridor and potential modifications of the Exit 7 interchange.

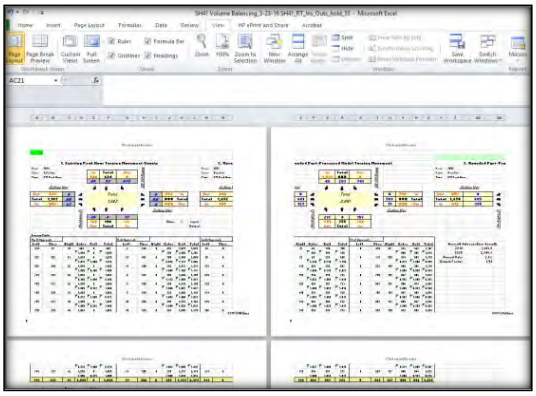
These sections will be addressed at a later date by Idaho Transportation Department. Further analysis of these sections will need to be addressed to see what improvements are warranted and what can be done to improve the safety, capacity and congestion in those areas. ITD will analyze the entire Interstate 90 route, including this interchange, between the Washington State Line to 15th Street in a forthcoming corridor study. Interchange improvement needs will be addressed as part of this future study.

Funding for urban improvements along the corridor such as; roadway illumination, multi-use paths, curb and gutter could be obtained from a number of sources; ITD, City Impact Fees, Urban Renewal, etc. Jurisdictions will need to work together collaboratively and discuss potential funding opportunities. Since, ITD (District 1) is the main stakeholder for SH 41, any possible funding opportunities should be deliberated and coordinated with them.

Traffic Volumes

Turning Movement Counts (TMC's) were taken by Quality Counts using Miovision technology cameras at most of the 67 intersections included in this study. Some other manual counts were collected for the PM PK HR at some minor intersections by KMPO staff.

The TMCs were entered into an excel spreadsheet workbook along with the travel demand model volumes for 2014 and the out-year 2035. The existing 2014 model volumes, TMC's and the 2035 forecast model volumes were factored using the Furness method within the workbook. The volumes were then balanced within the spreadsheet and the output volumes were then placed into Synchro files for their analysis for this study. KMPO worked with ITD District 1 to ensure conformity.



TMC excel workbook

Synchro Analysis - Intersection Level of Service

Intersection operations were gauged according to levels of service (LOS) methodologies and procedures identified by the Highway Capacity Manual (TRB Special Report 209, 2000). Levels of service are a qualitative measure of traffic flow and congestion at intersections and on roadway sections. Levels of service are separated into six grades that range from LOS A, indicating free-flow traffic, to LOS F, indicating extreme congestion and long vehicle delays:

LOS Criteria:

LOS A – Free Flow
LOS B – Stable Flow, Slight Delays
LOS C – Stable Flows, Normal Delays
LOS D – Stable Flow, Long Delays
LOS E – Unstable Flow, Intolerable Delays
LOS F – Forced Flow, Failures

Intersections that operate better than LOS C are anticipated to provide adequate mobility and capacity for additional traffic growth. Intersections that operate at LOS D have adequate mobility, but have limited growth potential. Capacity and mobility deficiencies begin to occur a t LOS E, and as an intersection ceases to function appropriately at LOS F. ITD indicates LOS D as the lowest acceptable operation for intersections in a planning level study. Synchro®, Version 9.1.904.125 by TrafficWare was used to analyze peak hour LOS. This application is based upon the methodologies described by the Highway Capacity Manual.

Tables 19-21 provides a summary of LOS for the existing and future signalized intersections out of the total 67 intersections located within the corridor (SH 41, Greensferry Rd. and Meyer Rd.), this includes the intersection of eastbound Seltice Way/ I-90 Interchange ramp, Mullan Ave. and Cecil Rd., along with Greensferry and Meyer intersections. The LOS is based on HCM 2000 since the HCM 2010 Synchro version is limited and is incapable of analyzing intersections with more than upon existing and forecast calibrated traffic volumes generated from the model for the proposed alternative.

Synchro Sim Traffic Snapshot of SH 41 & Seltice Way Intersection

The **Synchro analysis** used three scenario files that were optimized in Synchro as follows:

2014 Existing
2014 existing conditions with 2014 balanced volumes.

2035 Build
2035 forecast conditions with 2035 balanced adjusted volumes using the HCM methodology.

2035 No-Build
2014 existing roadway network (if no network improvements were made) and the 2035 balanced adjusted volumes based on land use throughout the corridor for the mixed use scenario.

The balanced 2014 volumes along the corridor were compared to ITD's estimates along the corridor route and were reasonable.

Synchro® has the ability to provide corridor MOEs based upon existing and forecast traffic volumes and conditions (intersection controls, road capacities, etc.). Average Vehicle speeds, travel times, and corridor LOS are used to judge the overall operation of a corridor because it accounts for impacts that do not occur at intersections, such as delays that result from traffic accessing a roadway at driveways, etc.

Prior to optimizing the signals in Synchro, the signals were coordinated along SH 41 from Seltice Way to Boekel Road and along Greensferry Road from Mullan Ave. to Prairie Ave. Any other signals within the corridor were un-coordinated.

This analysis was generated for; the entire SH 41 corridor between Seltice Way and SH 53, Greensferry Rd. from Mullan Ave. to SH 53 and along Meyer Road from 16th Ave. to SH 53 based upon existing traffic conditions and each of the forecast alternatives. Summary results (Average travel speeds, total travel times, and arterial LOS) are provided for comparison in Table 21. Note that this type of information is primarily used for the purposes of comparison of speed, as travel times will have a certain degree of error when compared with actual measurements.

Table 17- Intersection LOS - SH 41

Intersection LOS Summary for Highway 41 Corridor			
Year	LOS A to C	LOS D	LOS E & F
2014 Existing	7	2	0
2035 No-Build	4	1	4
2035 Build	13	1	2

Table 18 - Intersection LOS Summary - Greensferry Rd.

Intersection LOS Summary Greensferry Road			
Year	LOS A to C	LOS D	LOS E & F
2014 Existing	1	0	0
2035 No-Build	0	0	1
2035 Build	3	2	0

Table 19 - Intersection LOS Summary - Meyer Rd.

Intersection LOS Summary for Meyer Road			
Year	LOS A to C	LOS D	LOS E & F
2014 Existing	1	0	0
2035 No-Build	1	0	0
2035 Build	1	0	0

The 2014 results indicate that most intersections currently operate between LOS B and C during the PM peak hour which implies that there is available capacity for traffic growth at these intersections/areas beyond what is being used today. Two of the intersections are operating at LOS D which are; I-90 & Seltice Way and SH 41 & Mullan Ave. which indicates poor traffic operations with no capacity for growth.

The capacity offered by the planned improvements should enhance LOS, even with the increase of traffic associated with the proposed land use. In the year 2035 only one intersection would operate at LOS D which is SH 41 & Prairie Ave. and two intersections operate at LOS E/F (SH 41 & Seltice Way (F) & SH 41 & Mullan Ave. (D) during the forecast PM peak hour, indicating that Highway 41 can accommodate traffic growth with improvement. As indicated the SH 41 & Seltice Way (LOS F) intersection cannot be improved for some time until interchange realignment issues and financial constraints are met.

The following pages reflect the analysis findings for the SH 41 Master Corridor Plan Update

Table 20 - Signalized Intersection Results PHV/DHV/LOS- SH 41 Only

LOS SIGNAL RESULTS FOR SH 41								
Intersection/Name	Intersection Number	Milepost	Year 2014		Year 2035		Year 2014 W/2035 LU	
			PHV	LOS	DHV	LOS	DHV	LOS
I-90 EB Off & Seltice Way (EB/WB)	1	N/A	1720	B	2240	C	2240	C
SH 41 & Seltice Way (NB/SB)	2	0.03	2155	D	2270	F	2270	E
SH 41 & I-90 WB Ramp (NB/SB)	3	0.17	2610	C	2415	C	2415	C
SH 41 & Mullan Ave (NB/SB)	5	0.446	1870	D	1645	E	1645	F
SH 41 & 16th Ave (NB/SB)	7	0.945	1790	F.S.	1530	B	1530	F.S.
SH 41 & Poleline Ave (NB/SB)	9	1.445	1670	C	1320	C	1320	D
SH 41 & Bluegrass/Hope Ave (NB/SB)	11	N/A	N/A	F.S.	1255	A	1255	F.S.
SH 41 & Prairie Ave (NB/SB)	12	2.449	1130	C	1595	D	1595	E
SH 41 & Harvest (NB/SB)	13	N/A	N/A	F.S.	1590	A	1590	F.S.
SH 41 & Hayden Ave (NB/SB)	15	3.451	1015	B	1975	C	1975	F
SH 41 & Wyoming Ave NB/SB)	16	4.454	990	F.S.	1885	A	1885	F.S.
SH 41 & Ok Corral (NB/SB)	17	N/A	N/A	F.S.	1880	A	1880	F.S.
SH 41 & Lancaster Ave (NB/SB)	18	5.457	975	F.S.	1865	B	1865	F.S.
SH 41 & Nagel Lane (NB/SB)	19	6.081	940	F.S.	1780	B	1780	F.S.
SH 41 & Boekel Rd (NB/SB)	21	6.46	915	B	1340	B	1340	B
SH 41 & SH41/SH53 Junction (NB/SB)	34	7.72	985	B	1220	B	1220	B

PHV & DHV taken from balanced turning movement counts (East or North of Intersections)

F.S. = Future Signal

Note: PHV is noted as PM Peak Hour (PM PK HR), DHV Design Hour Volume, is shown here only as the forecast volume for the PM PK HR in the future year.

Table 21 - Summary LOS All Signalized Intersections

Intersection	SCENARIO	TOT	NB	SB	EB	WB
#1 Seltice Way & EB Off @ Herborn	2014 EXIST	B	C	B	B	A
	2014 NO-BUILD	C	D	C	C	B
	2035 BUILD	C	C	B	C	B
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#2 SH 41 & Seltice Way	2014 EXIST	D	D	C	E	E
	2014 NO-BUILD	E	D	E	F	F
	2035 BUILD	F	E	F	E	E
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#3 SH 41 & I-90 WB Ramp	2014 EXIST	C	B	C	D	N/A
	2014 NO-BUILD	C	C	C	E	N/A
	2035 BUILD	C	C	D	D	N/A
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#5 SH 41 & Mullan Avenue	2014 EXIST	D	C	F	D	E
	2014 NO-BUILD	F	E	F	F	F
	2035 BUILD	E	E	E	E	E
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#7 SH 41 & 16th Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	B	B	B	C	C
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#9 SH 41 & Poleline Avenue	2014 EXIST	C	B	C	C	C
	2014 NO-BUILD	D	C	D	B	E
	2035 BUILD	C	C	C	B	B
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#11 SH 41 & Bluegrass/Hope	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD					
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#12 SH 41 & Prairie Avenue	2014 EXIST	C	C	C	C	C
	2014 NO-BUILD	E	E	C	E	F
	2035 BUILD	D	C	D	C	D
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#13 SH 41 & Harvest Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	A	A	A	D	E
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#15 SH 41 & Hayden Avenue	2014 EXIST	B	B	B	C	B
	2014 NO-BUILD	F	E	F	D	F
	2035 BUILD	C	B	C	C	D
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#16 SH 41 & Wyoming Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	A	A	A	D	D
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#17 SH 41 & Ok Corral	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	A	A	A	D	E

Table 21 - Summary LOS All Signalized Intersections (Cont.)

Intersection	SCENARIO	TOT	NB	SB	EB	WB
#19 SH 41 & Nagel Lane	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	B	B	B	D	D
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#21 SH 41 & Boekel Road	2014 EXIST	B	N	B	A	A
	2014 NO-BUILD	B	B	A	B	B
	2035 BUILD	B	A	A	C	D
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#34 SH 41 & SH41/SH 53 Junction	2014 EXIST	B	N/A	A	B	B
	2014 NO-BUILD	B	N/A	A	B	B
	2035 BUILD	B	N/A	C	B	A
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#35 Meyer Road & SH 53	2014 EXIST	F.S.	F.S.	N/A	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	N/A	F.S.	F.S
	2035 BUILD	B	B	N/A	B	C
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#36 Greensferry Road & Mullan Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	D	D	C	E	D
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#37 Greensferry Road & 16th Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	B	B	B	C	C
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#40 Greensferry Road & Poleline Avenue	2014 EXIST	B	C	B	B	B
	2014 NO-BUILD	F	C	F	F	D
	2035 BUILD	D	D	C	C	C
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#43 Greensferry Road & Prairie Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	C	C	C	C	C
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#46 Greensferry Road & Hayden Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	B	A	A	B	B
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#53 Cecil St & Mullan Avenue	2014 EXIST	B	B	B	A	A
	2014 NO-BUILD	C	E	D	C	C
	2035 BUILD	C	C	C	C	B
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#57 Meyer Road & Poleline Avenue	2014 EXIST	B	A	A	B	A
	2014 NO-BUILD	C	A	C	D	B
	2035 BUILD	C	C	C	C	C
Intersection	SCENARIO	TOT	NB	SB	EB	WB
#60 Meyer Road & Hayden Avenue	2014 EXIST	F.S.	F.S.	F.S	F.S.	F.S
	2014 NO-BUILD	F.S.	F.S.	F.S	F.S.	F.S
	2035 BUILD	C	A	C	D	D

F.S. = Signal does not exist in 2014, future signal

Detailed LOS summary results are highlighted as part of Figure 21. This Figure shows both the total and approach LOS for intersections under the existing and proposed alternatives. Note that total intersection LOS is the appropriate gauge for planning level traffic operations and that approach LOS have been shown only for the purpose of comparison.

Corridor Operations

Synchro® also has the ability to provide corridor MOE's based upon existing and forecast traffic volumes and conditions (intersection controls, road capacities, etc.). Average vehicle speeds, travel times and corridor LOS are used to judge the overall operation of a corridor because it accounts for impacts that do not occur at intersections, such as delays that result from traffic accessing a roadway at driveways, etc.

This analysis was generated for the entire SH 41 corridor between Seltice Way and the SH 41/53 junction based upon existing traffic conditions and each of the future forecasts. Summary results (Average travel speeds, total travel times and arterial LOS are provided for comparison in Table 21. Note that this type of information is primarily used for the purposes of comparison of speed, as travel times will have a certain degree of error when compared to actual measurements.

Table 22 - Corridor MOE's & Arterial LOS

CORRIDOR MEASURE OF EFFECTIVENESS SUMMARY						
Measure of Effectiveness	2014 Model		2014 No-Build Model		2035 Model	
	NB	SB	NB	SB	NB	SB
Average Travel Speed	39.60	38.70	32.10	33.60	32.30	30.00
Total Travel Time (Minutes)	11.42 min	11.77 min	12.2 min	13.3 min	12.2 min	14.9 min
Arterial LOS	B	B	C	C	C	C

SH 41 Arterial LEVEL OF Service (LOS)						
Cross Street with SH 41	2014 Model		2014 No-Build Model		2035 Model	
	NB	SB	NB	SB	NB	SB
Seltice Way	F	D	F	F	F	F
I-90 WB Ramp	D	E	D	E	D	F
Mullan Avenue	D	C	D	D	F	E
16th Avenue	F.S.	F.S.	F.S.	F.S.	B	B
Poleline Avenue	A	B	B	C	D	D
Bluegrass/Hope Avenue	F.S.	F.S.	F.S.	F.S.	B	B
Prairie Avenue	B	A	C	B	C	C
Harvest	F.S.	F.S.	F.S.	F.S.	A	A
Hayden Avenue	A	A	D	A	B	A
Wyoming Avenue	F.S.	F.S.	F.S.	F.S.	A	A
OK Corral	F.S.	F.S.	F.S.	F.S.	A	A
Lancaster Avenue	F.S.	F.S.	F.S.	F.S.	B	A
Nagel Lane	F.S.	F.S.	F.S.	F.S.	A	C
Boekel Road	A	A	A	A	B	A
SH 41/SH 53	A	E	C	C	C	C
OVERALL AVERAGE	B	B	C	C	C	C

F.S. = Future Signal

As shown in Table 22 above, the addition of a controlled access point onto Highway 41 will have the impact of reducing overall corridor operation even though intersection operations/LOS are shown as improved. A 7 to 9 mph reduction in speed occurs between the 2014 base year and the 2035 Build year when comparing like directions of travel. Travel time is increased by one to three minutes that can be expected on Highway 41

between the years 2014 and 2035 Build along the corridor. Other improvements on SH 41 are needed to improve the LOS ratings that are rated E through F.

The main intersections that need improvements in the forecast model year 2035 are SH 41/Seltice Way, SH 41/I-90 WB ramp and SH 41/Mullan Ave. They show the greatest impact along Highway 41 due to more traffic being generated and assigned to the roadway at the proposed access locations.

If the intersections with service at LOS E & F are not improved, congestion will continue to increase to unacceptable levels.

Synchro Reports

The Synchro Reports for the signalized intersections for the 2035 Build year are included in the appendices.

Accident Summary

The Idaho Transportation Department (ITD), Office of Highway Operations and Safety maintains accident histories for all State Highways. The collision histories were taken from their database between the years 2011 thru 2015.

Safety conditions were identified in the Highway 41 corridor through an examination of vehicular accident data obtained from ITD and examined to summarize the frequency of occurrences, severity, and type of accidents.

Recent roadway segments and intersection related accidents between 2011 and 2015 were analyzed. The results are contained in the following pages.

The Milepost Log from ITD is included for reference within this section on the following pages:

Figure 38 - State Highway 41 - ITD Milepost Log

IDAHO TRANSPORTATION DEPARTMENT

Effective Date: 01/26/2016

MILEPOINT LOG - STATE HIGHWAY SYSTEM

Route: 0041 Record Type: All County: All Urban Area: All

Maint. Dist.: All Foreman Area: All

Segment Code	Milepoint	Description of Milepoint		City Name	—Intersecting— Segment Code	Milepoint	FA Route Number
SH 41		**Main Route** **Ascending**	**Road**	**ITD District 1**		**Kootenai County**	
001630	0	SELTICE WAY RT & LT		Post Falls	006020	1.625	7575
001630	0.03	JCT I-90 EB ON RAMP RT, IC #7		Post Falls	001680	0	7575
SH 41		**SH Connector** **One-Way Reverse**	**Road**	**ITD District 1**		**Kootenai County**	
030391	0	BEG SH CONN TO E SELTICE WY & ROSS PT RD RT & LT		Post Falls	001630	0.018	7575
030391	0.036	END SH-41 CONNECTOR & E SELTICE WAY RT & LT		Post Falls	006020	1.601	7575
SH 41		**Main Route** **Ascending**	**Road**	**ITD District 1**		**Kootenai County**	
001630	0.03	JCT I-90 EB ON RAMP RT, IC #7		Post Falls	001680	0	7575
001630	0.065	CTR I-90 UNDERPASS IC# 7 EBL # 16795		Post Falls	001660	7.128	7575
001630	0.075	CTR I-90 UNDERPASS IC# 7 WBL # 16790		Post Falls	001660	7.129	7575
001630	0.13	>>> Leaving City Limits <<<		Post Falls			7575
001630	0.17	JCT I-90 WB ON RAMP IC# 7			001681	0	7575
001630	0.17	JCT I-90 WB OFF RAMP IC# 7			001682	0.21	7575
001630	0.24	E NEUFELD LN RT & E MANOR AVE LT			022925	100.342	7575
001630	0.293	>>> Entering City Limits <<<		Post Falls			7575
001630	0.435	>>> Leaving City Limits <<<		Post Falls			7575
001630	0.446	MOLLAN AVE LT & RT			005930	2.668	7575
001630	0.45	>>> Entering City Limits <<<		Post Falls			7575
001630	0.69	12TH AVE LT		Post Falls			7575
001630	0.945	16TH AVE RT & LT		Post Falls			7575
001630	1.195	HORSEHAVEN AVE RT & LT		Post Falls	022918	100	7575
001630	1.3	UNDERGROUND UTILITY CROSSING		Post Falls			7575
001630	1.41	ENT ELECTRICAL SUBSTATION LT		Post Falls			7575
001630	1.445	POLE LINE RD RT & LT		Post Falls			7575
001630	1.695	EARLY DAWN AVE RT		Post Falls			7575
001630	1.944	OVERHEAD UTILITY CROSSING		Post Falls			7575
001630	1.945	HOPE AVE RT		Post Falls			7575
001630	2.449	E PRAIRIE AVE RT & LT		Post Falls	002017	105.76	5732
001630	2.449	E PRAIRIE AVE RT & LT		Post Falls	002017	105.76	7575
001630	2.449	>>> Leaving Urban Limits <<< Cda-Post Falls		Post Falls			7575
001630	2.849	RR CROSSING #662605N		Post Falls			5732
001630	2.951	>>> Leaving City Limits <<<		Post Falls			5732
001630	3.451	HAYDEN AVE RT			006080	0	5732
001630	3.93	RR CROSSING #662624T					5732
001630	4.454	WYOMING AVE RT & LT					5732
001630	4.986	ENT TO MICROWAVE STATION RT					5732
001630	5.457	LANCASTER RD RT & LT					5732
001630	5.706	>>> Entering City Limits <<<		Rathdrum			5732
001630	5.934	OVERHEAD UTILITY CROSSING		Rathdrum			5732
001630	6.035	UNDERGROUND UTILITY CROSSING		Rathdrum			5732
001630	6.081	HAGEL ST RT & LT		Rathdrum	030857	100.495	5732
001630	6.29	CALIFORNIA ST RT & LT		Rathdrum	030856	100.452	5732
001630	6.46	BOEKEL RD RT		Rathdrum	015934	100	5732
001630	6.52	MONTANA ST LT		Rathdrum	023464	100.305	5732
001630	6.712	E PINE ST RT		Rathdrum	023475	100	5732
001630	6.768	5TH ST LT		Rathdrum			5732
001630	6.774	FIVEPOINT ST RT		Rathdrum			5732
001630	6.784	COEUR D'ALENE ST LT		Rathdrum	023470	100	5732
001630	6.844	CRENSHAW ST RT		Rathdrum			5732
001630	6.906	WRIGHT ST RT & LT		Rathdrum	023514	100.017	5732
001630	7.007	OHIO ST RT & LT		Rathdrum			5732
001630	7.1	LEWIS ST RT & LT		Rathdrum			5732
001630	7.203	STEVENS ST RT		Rathdrum			5732
001630	7.246	CLARK ST RT & STEVENS ST LT		Rathdrum			5732
001630	7.29	WASHINGTON AVE RT & LT		Rathdrum			5732
001630	7.36	VERNON ST RT		Rathdrum	030850	100.294	5732
001630	7.46	VERA ST RT		Rathdrum	030848	100.297	5732
001630	7.65	MAIN ST LT		Rathdrum	029259	100.995	5732

Report Printed: 1/26/16 12:58 PM Page 1 of 3

SH 41- ITD Milepost Log (Cont.)

IDAHO TRANSPORTATION DEPARTMENT

Effective Date: 01/26/2016

MILEPOINT LOG - STATE HIGHWAY SYSTEM

Route: 0041 Record Type: All County: All Urban Area: All

Maint. Dist.: All Foreman Area: All

Segment Code	Milepoint	Description of Milepoint		City Name	—Intersecting— Segment Code	Milepoint	FA Route Number
SH 41		**Main Route Ascending**	**Road**	**ITD District 1**		**Kootenai County**	
001630	7.72	JCT SH-53 RT		Rathdrum	006047	0	5732
006047	0	JCT SH-53 RT/SH-41 LT & AH		Rathdrum	001630	7.72	18
006047	0.27	JCT SH-53 LT/SH-41 RT		Rathdrum	001630	7.9	18
001630	7.9	JCT SH-53 LT		Rathdrum	006047	0.27	5733
001630	8.25	BEG TURNOUT RT		Rathdrum			5733
001630	8.29	END TURNOUT RT		Rathdrum			5733
001630	8.555	W DIAGONAL RD RT		Rathdrum	023009	100	5733
001630	8.693	>>> Leaving City Limits <<<		Rathdrum			5733
001630	8.92	WILLADSEN RD LT					5733
001630	8.959	AUTOMATIC TRAFFIC COUNTER STA #41					5733
001630	10.01	STURGEON RD RT & LT					5733
001630	10.158	TWIN LAKES AVE RT					5733
001630	10.27	GUNNING RD LT					5733
001630	10.429	W GOLDEN AVE RT			024879	100	5733
001630	10.706	LODESTAR AVE RT			024878	100.801	5733
001630	11.114	RICE RD LT					5733
001630	11.455	TWIN LAKES AREA (SIGN RT: UNINCORPORATED)					5733
001630	11.648	SCARCELLO RD RT & VILLAGE BLVD LT					5733
001630	11.934	PAR 3 GOLF COURSE RD LT			026062	100.285	5733
001630	11.934	PAR 3 GOLF COURSE RD LT					5733
001630	12.565	W TWIN LAKES RD (SPORTSMAN ACCESS) LT			002035	114.226	5733
001630	12.98	ENTRANCE TO STATE MATERIALS SOURCE RT 148 FT					5733
001630	13.38	GRAYEAGLE RD LT					5733
001630	14.249	SEASONS RD RT					5733
001630	15.186	MCWILLIAMS RD RT					5733
001630	16.14	NURSERY LN LT					5733
001630	16.47	OLD HWY 41 RT					5733
001630	17.162	SPIRIT LAKE LOOP RD LT					5733
001630	17.883	CONN TO SPIRIT LAKE LOOP RD LT					5733
001630	18.118	>>> Entering City Limits <<<		Spirit Lake			5733
001630	18.134	JCT SH-54 RT		Spirit Lake	001640	0	5733
001630	18.433	5TH AVE & W BLACKWELL BLVD ST RT		Spirit Lake	038149	100	5733
001630	18.559	5TH AVE & W MARYLAND ST LT		Spirit Lake			5733
001630	18.559	5TH AVE & W MARYLAND ST LT		Spirit Lake	003424	100.105	5733
001630	18.61	ENTRANCE TO ITD MAINTENANCE YARD #11800 RT		Spirit Lake			5733
001630	18.678	5TH AVE & RHODE ISLAND ST RT & LT		Spirit Lake	023695	100.136	5733
001630	18.747	5TH AVE & MASSACHUSETTS ST RT		Spirit Lake	023694	100.138	5733
001630	18.84	5TH AVE & VERMONT ST RT & LT		Spirit Lake	023693	100.137	5733
001630	18.911	5TH AVE & NEW HAMPSHIRE ST RT & LT		Spirit Lake	023692	100.216	5733
001630	18.979	5TH AVE & MAINE ST RT & LT		Spirit Lake	001986	111.556	5733
001630	19.05	5TH AVE & WASHINGTON ST RT & LT		Spirit Lake	023690	100.239	5733
001630	19.127	5TH AVE & ADAMS ST RT & LT		Spirit Lake	023689	100.312	5733
001630	19.206	5TH AVE & JEFFERSON ST RT & LT		Spirit Lake	023686	100.305	5733
001630	19.288	5TH AVE & MONROE ST LT		Spirit Lake			5733
001630	19.362	5TH AVE & E MADISON ST RT & LT		Spirit Lake	023684	100	5733
001630	19.508	5TH AVE & JACKSON ST LT & RT		Spirit Lake	023682	100.139	5733
001630	19.661	5TH AVE & VAN BUREN ST LT & RT		Spirit Lake	023683	100.134	5733
001630	19.849	>>> Leaving County Limits <<< Kootenai		Spirit Lake			5733
SH 41		**Main Route Ascending**	**Road**	**ITD District 1**		**Bonner County**	
001630	19.849	>>> Entering County Limits <<< Bonner		Spirit Lake			5733
001630	19.856	>>> Leaving City Limits <<<		Spirit Lake			5733
001630	19.982	SH-41 & WALDEN LN LT			038169	100.298	5733
001630	20.599	EDGEMERE RD LT					5733
001630	20.925	SPIRIT LAKE RD (S49) RT					5733
001630	21.655	ENT STOCKPILE SITE BR-26 RT					5733
001630	22.08	BEG TURNOUT LT					5733
001630	22.11	END TURNOUT LT					5733
001630	22.3	STATE MATERIALS SOURCE BR-26 RT					5733

Report Printed: 1/26/16 12:58 PM Page 2 of 3

Roadway Segment Accidents

Table 24, provides three-years of segment accidents on the Highway 41 from Seltice Way to SH 53 between January 1, 2011 and March 2015. There were 332 total accidents over the five-year period. The analysis includes Average yearly accidents and accident severities; they are summarized between primary arterials and for the length of the corridor. The table shown below summarizes the type of accidents along the SH 41 corridor.

Rear end accidents were the highest throughout the entire corridor with a percentage of 56.6%, this high percentage of accidents shows the need for turn lanes and possible signage to alert drivers to pay attention. The corridor visually shows signs of skid marks approaching nearly every signalized intersection location along SH 41. The comments on the accident reports indicate inattention or following too close when rear end accidents occurred, there is also a need for added lane capacity throughout the length of the corridor due to the LOS congestion in the urbanized area. The highest number of rear-end accidents occurred in the segment between Seltice Way to Poleline Ave., this is one of the highest congested areas with an estimated traffic volume of over 24,000 vehicles per day, based on traffic counts taken along the corridor in 2014. The volumes were compared to ITD's calculated Average daily traffic (ADT) volumes from 2011-2014 as a reasonableness check.

Also shown is a calculated accident rate that quantifies accident frequencies based upon corridor section length, Average annual accidents, and typical weekday traffic volumes. The accident rate can help identify which sections of Highway 41 have high accident trends and can help determine if Highway 41 is a high accident corridor (HAC). The utilization of accident rate methodologies to identify HACs was coordinated and confirmed with ITD.

The formula used for calculating the crash rate for a roadway segment is presented below. The "Rate" ® is expressed in crashes per Million Vehicle Miles Traveled (MVMT), which is standard to the traffic engineering profession.

Table 23 - Roadway Crash Rate Formula

Roadway Segment Crash Rate
Formula: R = A X 1,000,000
L*V*365
A = Average number of crashes along the study roadway per year
R = Crashes per million miles traveled
L = Length of roadway segment in miles
V = Average Daily Traffic Volume along the roadway

Accident rates below two accidents per million vehicle miles are nominal and are not normally classified as HACs. Accident rates of between 2.0 and 3.0 should be further evaluated and may be classified as an HAC, depending upon location. Accident rates that exceed three accidents per million vehicle miles should be identified as areas of concern and can qualify as an HAC. The highest accident location is from Seltice Way to Mullan Ave. with an accident rate of 2.76. Sixteenth Ave. to Poleline Ave. is the second highest with an accident rate of 2.07 with Mullan Ave. to 12th Ave. at 1.55 and Stevens St to SH 53 with 1.49.

Table 24 - SH 41 Accident Segment Summary

Highway 41 Accident Segment Summary - 2011 through 2015 - UPDATED																		
			2011		2012		2013		2014		2015		TOTAL			Avg	Rate
Section	Section Length in miles	Daily Traffic	Pdo	Inj	Pdo	Inj	Pdo	Inj	Pdo	Inj	Pdo	Inj	Pdo	Inj	Total		
Seltice to Mullan	0.45	24,282	1	4	5	3	2	3	5	1	6	3	19	14	33	11.0	2.76
Mullan to 12th	0.24	22,040	1	0	2	1	0	2	0	1	0	2	3	6	9	3.0	1.55
12th to 16th	0.26	21,075	0	1	0	0	0	0	1	1	0	0	1	2	3	1.0	0.50
16th to Poleline	0.50	19,458	2	2	0	4	4	2	4	0	4	0	14	8	22	7.3	2.07
Poleline to Prairie	1.004	15,380	3	1	3	1	2	0	1	2	5	0	14	4	18	6.0	1.06
Prairie to Hayden	1.002	13,310	0	0	1	0	4	0	2	0	1	0	8	0	8	2.7	0.55
Hayden to Wyoming	1.003	11,950	1	0	0	0	1	3	1	2	0	1	3	6	9	3.0	0.69
Wyoming to Lancaster	1.003	11,650	1	1	1	0	1	1	0	1	1	1	4	4	8	2.7	0.63
Lancaster to Nagel	0.62	11,505	0	0	0	1	0	0	0	1	0	0	0	2	2	0.7	0.26
Nagel to Boekel	0.38	10,990	0	0	1	0	0	0	0	0	0	0	1	0	1	0.3	0.22
Boekel to Coeur d'Alene	0.32	10,830	0	0	0	0	0	1	0	0	1	0	1	1	2	0.7	0.53
Coeur d'Alene to Stevens	0.42	8,360	0	0	0	1	2	0	1	0	0	0	3	1	4	1.3	1.04
Stevens to SH 53	0.52	9,440	1	0	0	1	2	0	0	0	2	2	5	3	8	2.7	1.49
Highway 41 Corridor	**7.722**	**9,215 - 24,282**											**76**	**51**	**127**	**42.3**	**0.22 - 2.76**
		Totals	10	9	13	12	18	12	15	9	20	9					

ADT Volumes from Quality Counts (Miovision) 2014, Balanced and ADT Est. Using PM PK HR *11.8

Accidents are for segments only, they do not include: intersection related accidents or non-reportable accidents.

* Accidents thru March 2015.

The analysis indicates SH 41 has an Average of 65 accidents per year between Seltice Way and the SH41/SH53 junction east of Rathdrum. This is an increase of 41% compared to the previous SH 41 master corridor report of 46 accidents per year for accidents between Seltice Way and Lancaster. On Average, accidents occur at a rate of between 0.21 and 2.76 accidents per million vehicle miles, which suggests that the corridor currently is not an HAC.

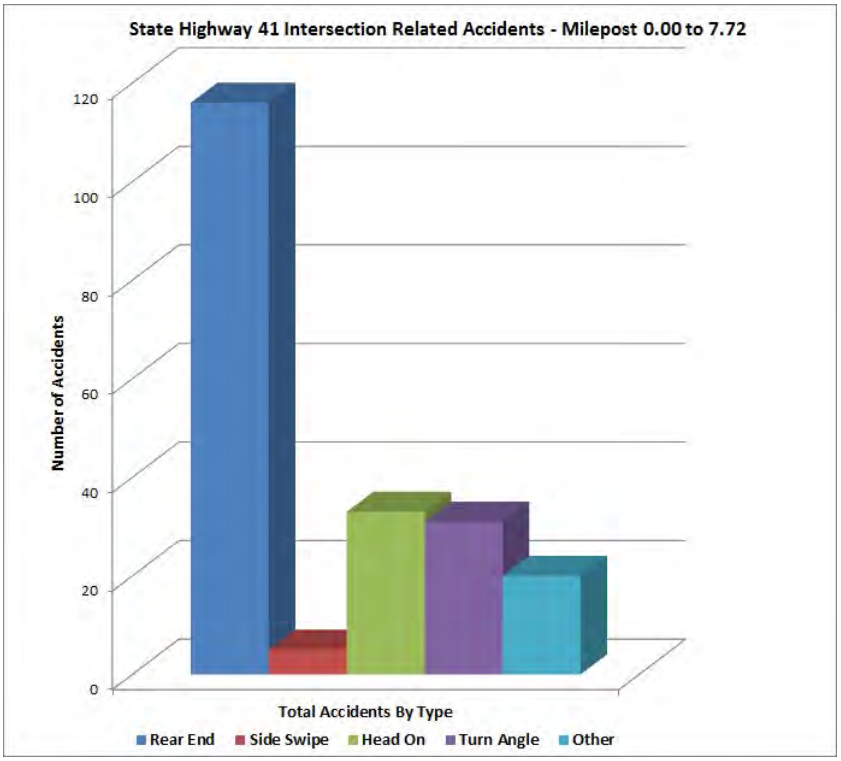
Accident rates are the highest between Seltice Way to Mullan Ave., 16th Ave. to Poleline Ave., Mullan Ave. to 12th Ave. and Stevens St to SH 53. Highway 41 intersects with I-90 and several other highly utilized arterials. As a result, the potential for vehicle conflicts are high and has resulted in a higher occurrence of accidents. Some accidents on roadway go unreported and therefore results may be understated. For this time-period no fatalities were reported. This section of Highway 41 should be the focus of concern and further examination.

Intersection Accidents

Table 25 provides a summary of accidents and accident types at intersections along Highway 41. Reoccurring accidents can indicate a pattern that is being caused by factors, such as lack of controls or intersection design flaws. Intersection type data can be used to identify these patterns.

As shown in Table 25, the majority of accidents within the corridor occurs at or due to intersection related accidents, this number has decreased from the SH 41 Master Corridor report (2002) with 38% of all accidents occurring along segments between roadway intersections related accidents. Accidents typically occur with more frequency at intersections, so this could be due to the other access points along the SH 41 corridor. As you can see in the Figure below, rear end accidents are the most common type at intersections throughout the corridor.

Figure 39 - SH 41 Intersection RELATED Accidents

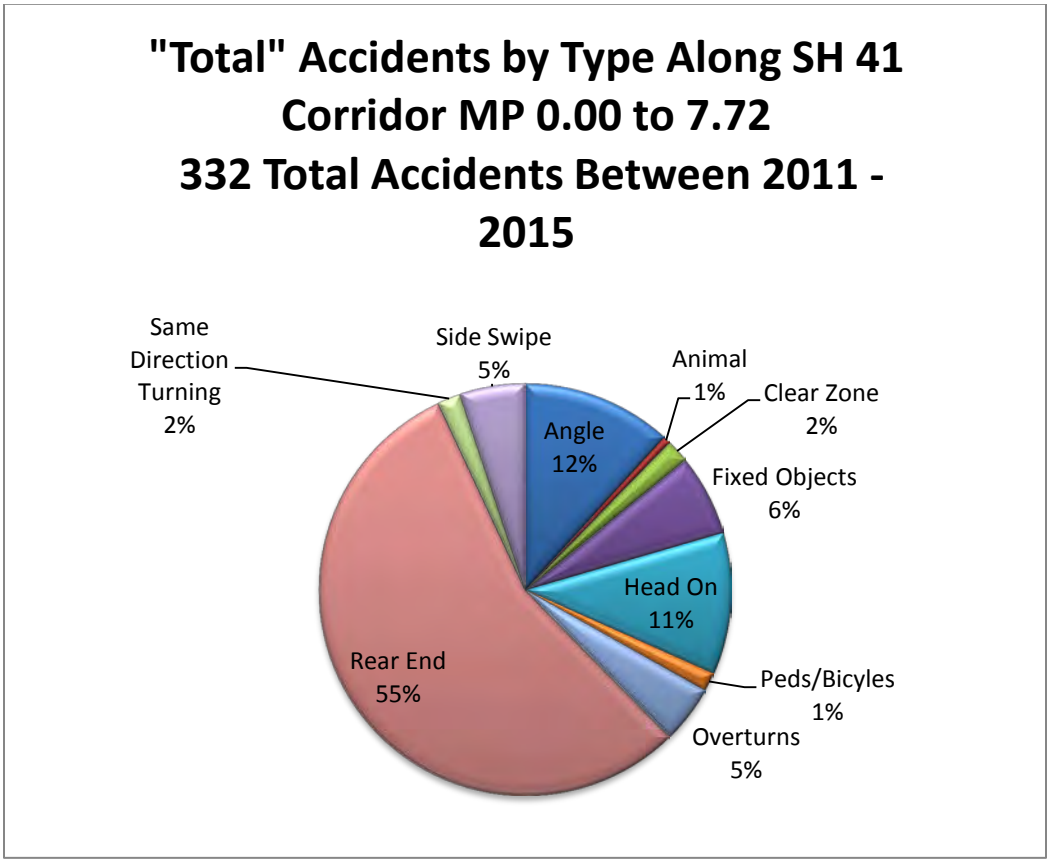


When looking at the entire corridor; approximately 55 percent of accidents at these intersections are rear-end accidents and close to 16 percent are sideswipe or head-on accidents. These accidents are typical of two-lane, high-speed highways without barrier separation and the data does not necessarily suggest a design error. Most of the remaining accidents are turn-angle or "T-Bone" accidents that occur with turning vehicles at intersections. This again is normal of high-speed facilities, as drivers misjudge the time available to safely turn from Highway 41 onto the side streets, or vise-versa.

Total Accidents along the Corridor

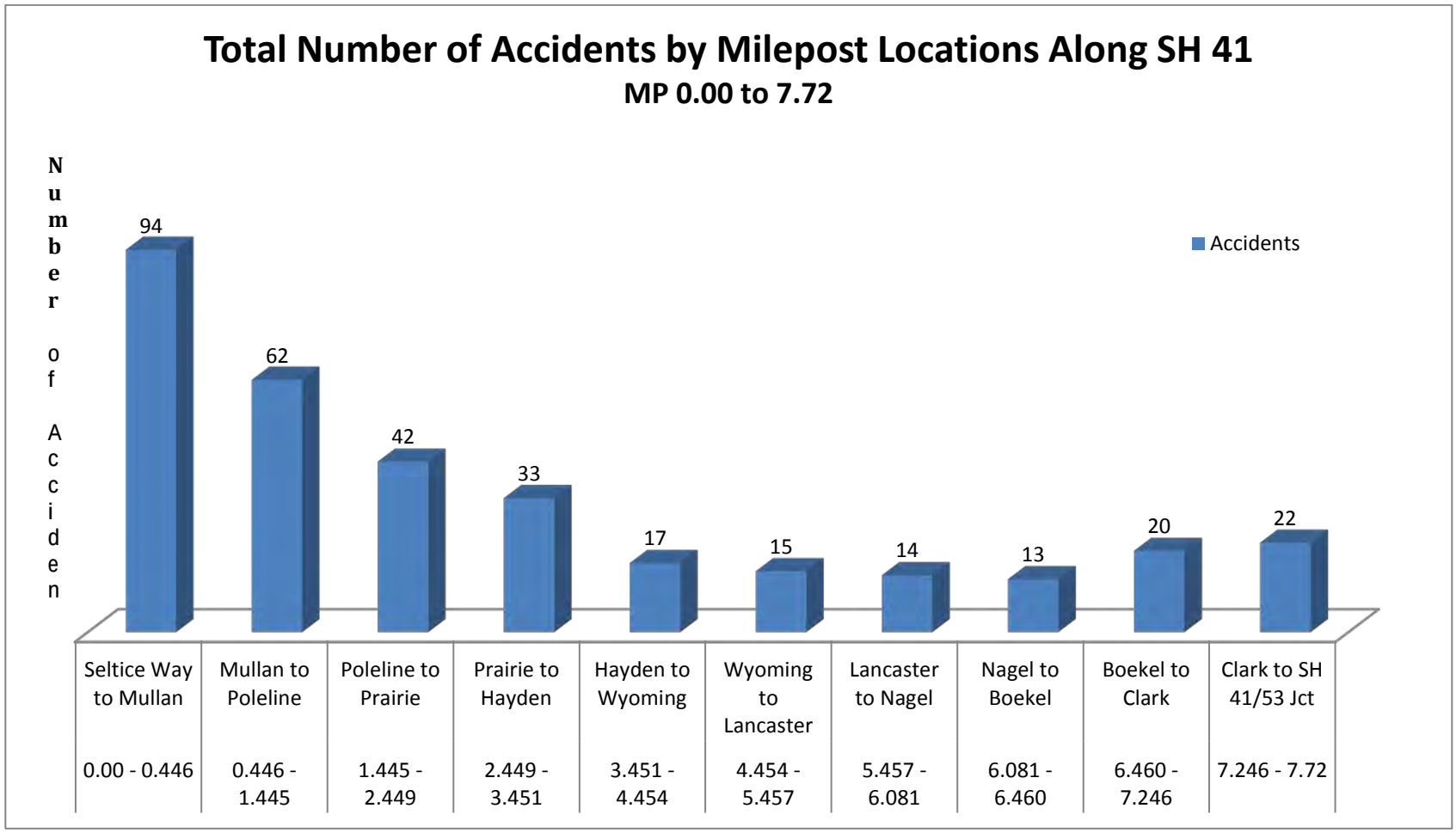
Between 2011 and March 2015, there were a total of 332 accidents (includes intersection related and segments) along the SH 41 corridor. Out of the total accidents, 205 were reported as intersection related accidents and 127 are non-intersection related accidents. When looking at the entire corridor (intersections and segments) the majority of accidents are rear end accidents, followed by angle related and head on collisions.

Figure 40 - Total Accidents by Type Along SH 41



The highest number of accidents along the corridor occur where the traffic volumes are the greatest, between Seltice Way to Mullan Ave. with 92 accidents, followed by Mullan to Poleline with 62 accidents. Poleline to Prairie Ave. had 42 accidents and Prairie to Poleline Avenues had 33 accidents reported. The next problem area is in the City of Rathdrum between Clark St to SH 41/53 Junction followed by the section of Boekel Rd. to Clark St with 20 accidents.

Figure 41 - Total Number of Accidents by Milepost Location Along SH 41

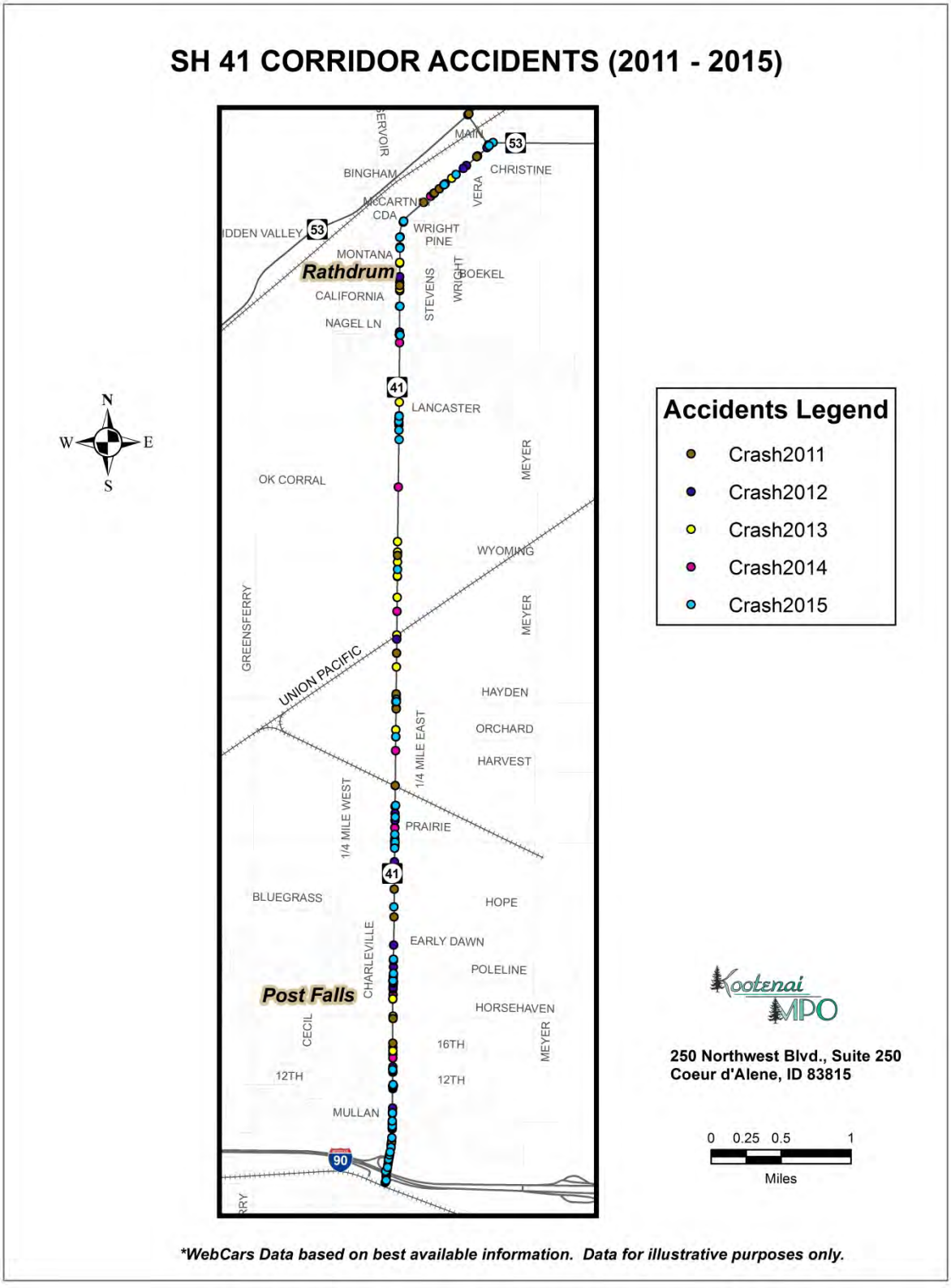


The intersection related accidents vary slightly from the entire corridor (intersection & segment accidents) however, the accidents follow the Same trend with the majority being rear-end accidents, followed by head-on, turn angle accidents, other and side swipes being the lowest type of accidents. Between property damage accidents and injury accidents; property damage occurred at 54% with injuries reported at 46% out of the total intersection related accidents reported. Accident data is from 2011 through March 2015.

Table 25 – SH 41 Intersection Accident Summary 2011 - 2015

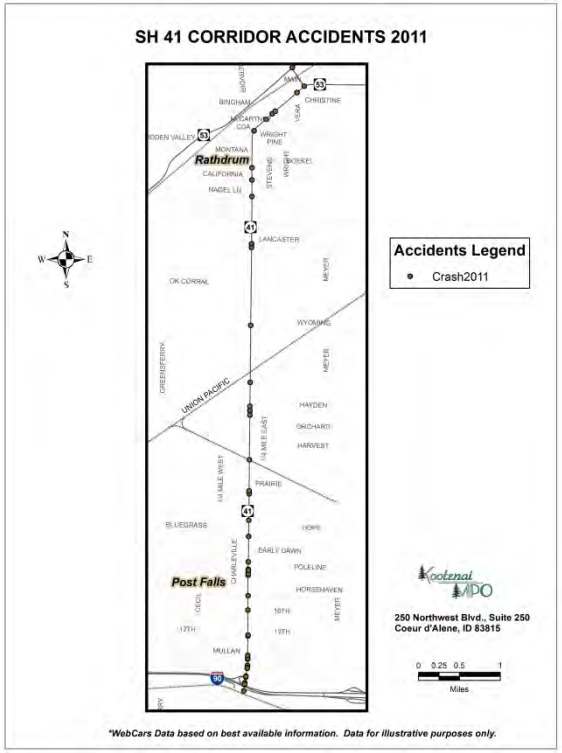
Highway 41 Intersection Accident Summary - 2011 through 2015											
Section	**Milepost**	**Pdo**	**Inj**	**Non-Reportable**	**Total**	**%of Corridor**	**Rear End**	**Side Swipe**	**Head On**	**Turn Angle**	**Other**
Seltice Way	0.00-0.001	9	1	Not Incld.	10	5%		3	1	4	2
Ramps/Underpass IC #7	0.07-0.185	23	12	Not Incld.	35	17%	13		19	3	
Neufield Ln/Manor Ave.	0.221-0.300	5	4	Not Incld.	9	4%	3	1	5		
Mullan Ave	0.387-0.511	6	4	Not Incld.	10	5%	8			2	
12th Ave	0.650-0.700	9	10	Not Incld.	19	9%	16	1		1	1
16th Ave	0.828-0.970	2	2	Not Incld.	4	2%	2			2	
Horsehaven Ave	1.195	1		Not Incld.	1	0%				1	
Poleline Ave	1.350-1.591	10	12	Not Incld.	22	11%	17		1	2	2
Early Dawn/Hope	1.695-1.945	1		Not Incld.	1	0%	1				
Prairie Ave	2.200-2.549	7	10	Not Incld.	17	8%	14			1	2
Hayden Ave	3.400-3.800	11	7	Not Incld.	18	9%	14			3	1
Wyoming Ave	4.454		2	Not Incld.	2	1%			1	1	
Lancaster Ave	5.453-5.600	6	6	Not Incld.	12	6%	7			1	4
Nagel Ln	6.081	3	2	Not Incld.	5	2%			2	3	
California St	6.29		4	Not Incld.	4	2%	3			1	
Boekel St	6.400-6.460	6	3	Not Incld.	9	4%	5		1	3	
Montana St	6.536	1		Not Incld.	1	0%			1		
Pine St	6.704-6.712	1	1	Not Incld.	2	1%	2				
Coeur d'Alene St	6.784	2	1	Not Incld.	3	1%	2		1		
Wright St	6.900-6.906		3	Not Incld.	3	1%	1			1	1
Lewis St	7.1	1		Not Incld.	1	0%					1
Stevens St	7.2	1	2	Not Incld.	3	1%	2				1
Clark St Rt & Stevens St Lt	7.246		1	Not Incld.	1	0%	1				
Washington Ave	7.294		1	Not Incld.	1	0%	1				
Vernon St	7.36		2	Not Incld.	2	1%					2
Vera St	7.5	1	2	Not Incld.	3	1%	2				1
Main St	7.7	1	1	Not Incld.	2	1%	2				
Jct SH-53	7.72	3	2	Not Incld.	5	2%			1	2	2
Total		**110**	**95**	**0**	**205**	**100%**	**116**	**5**	**33**	**31**	**20**
Percent of total intersection accidents							56.6%	2.4%	16.1%	15.1%	9.8%

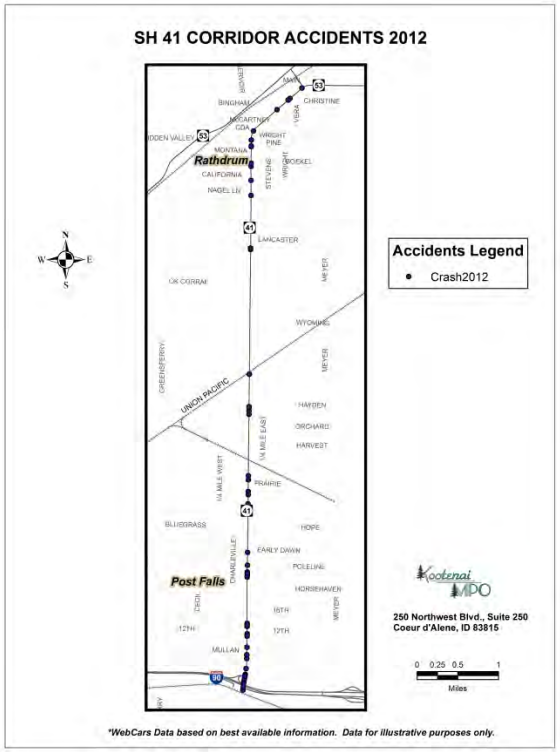
Figure 42 – SH 41 CORRIDOR ACCIDENTS 2011 to March 2015

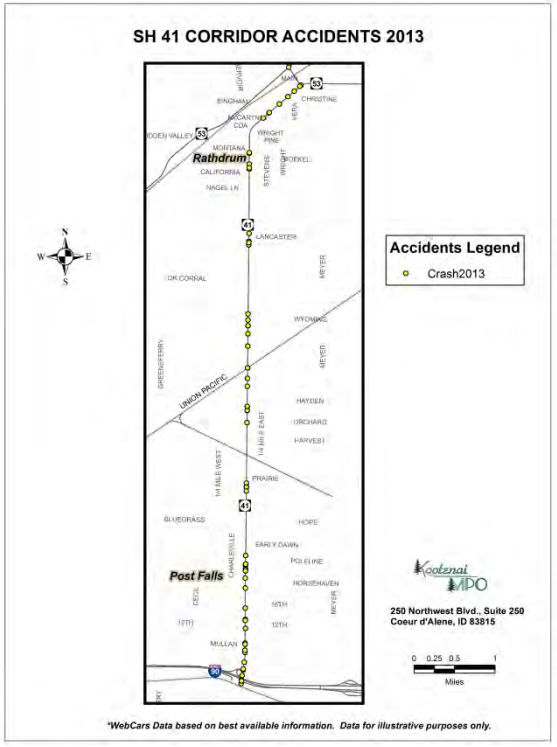


* Accidents are from 2011 through March 2015.

Figure 43 – SH 41 CORRIDOR ACCIDENTS by Year

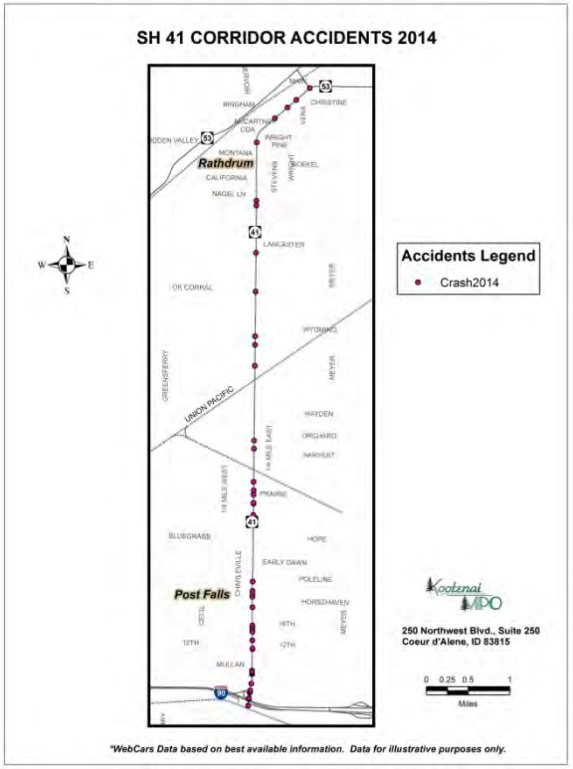


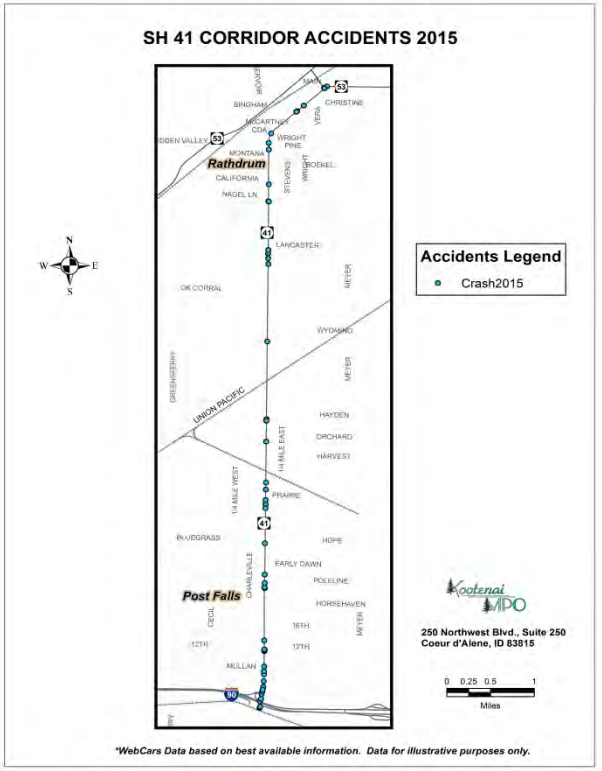




* Accidents are from 2011 through March 2015.

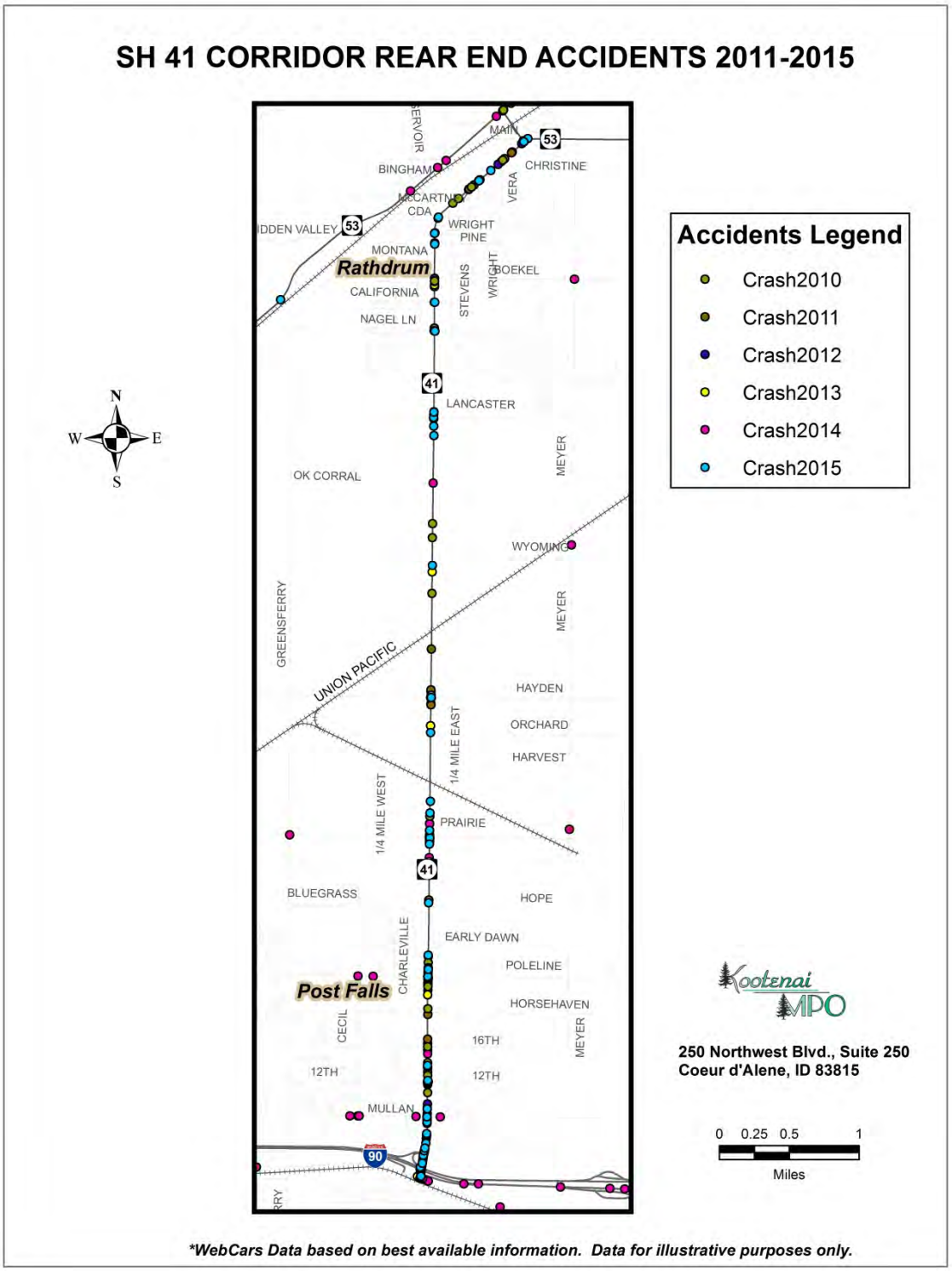
SH 41 CORRIDOR ACCIDENTS by Year (Continued)





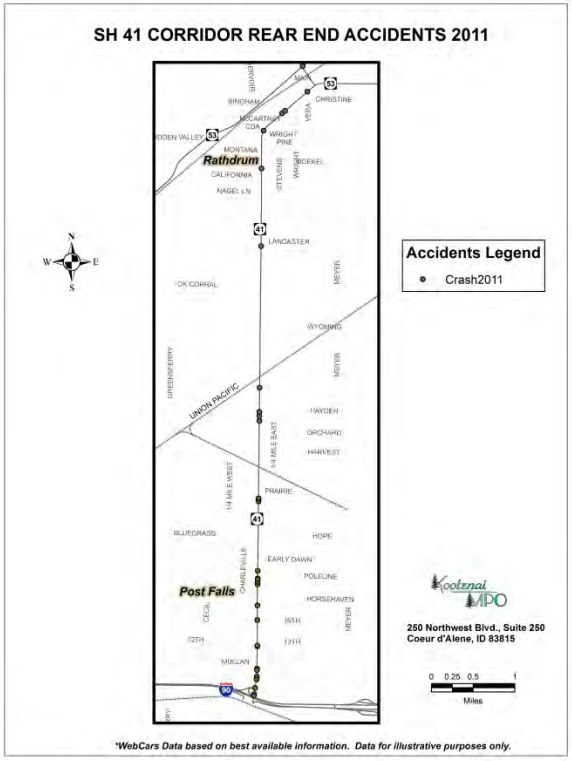
* Accidents are from 2011 through March 2015.

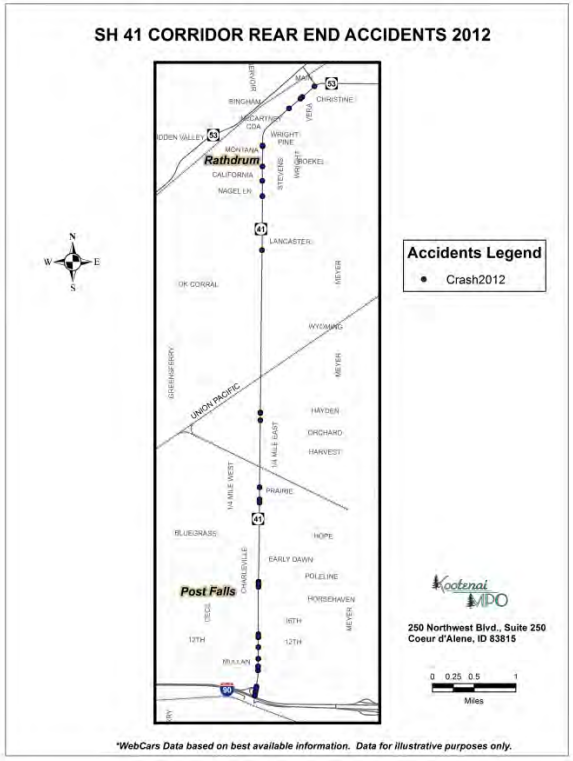
Figure 44 – SH 41 CORRIDOR REAR END ACCIDENTS 2011 - March 2015

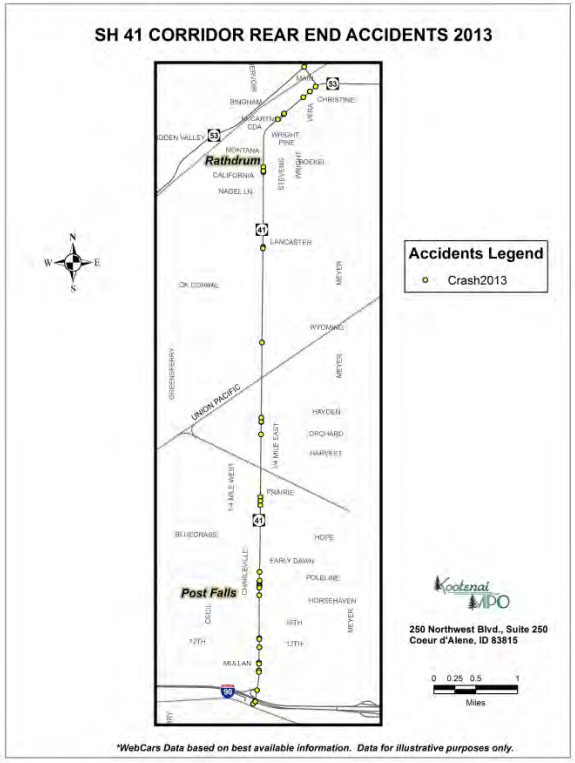


Accidents are from 2011 through March 2015.

Figure 45 – SH 41 CORRIDOR REAR END ACCIDENTS by Year

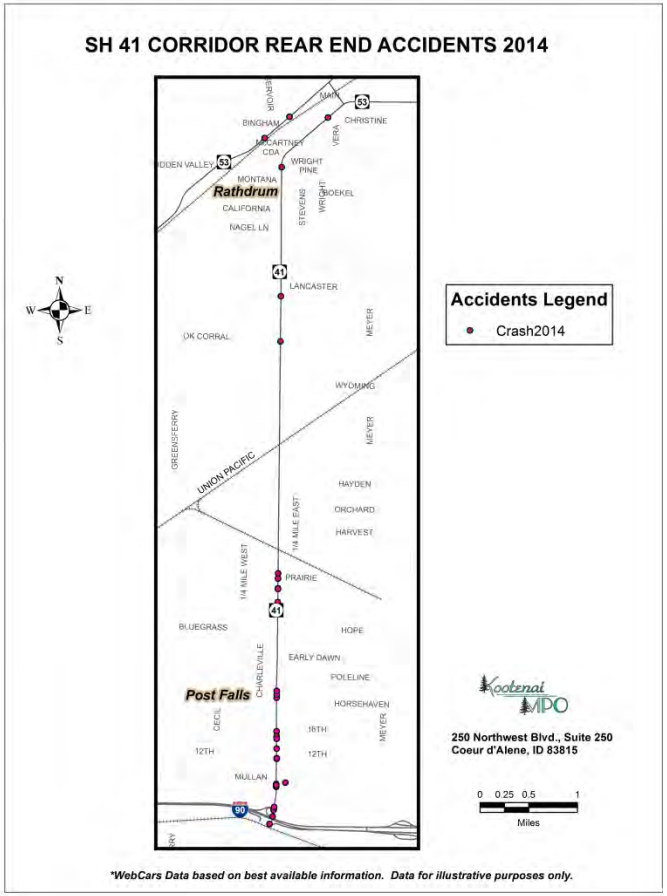


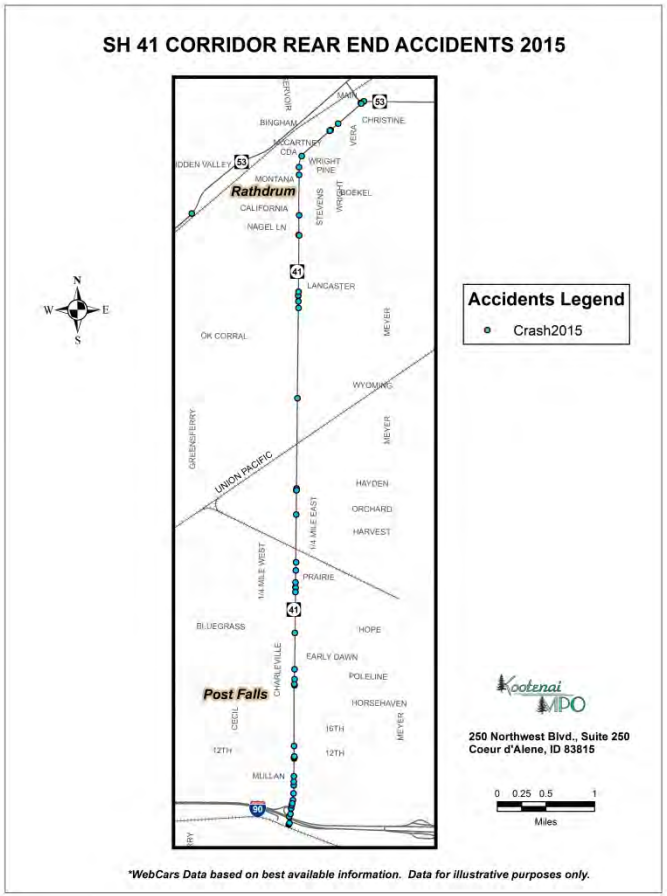




* Accidents are from 2011 through March 2015.

SH 41 CORRIDOR REAR END ACCIDENTS by Year (Continued)





* Accidents are from 2011 through March 2015.

Railroad Intersection Accidents

Recent statistics show Kootenai County's rail crossing incident rate has gone down slightly since the last KMPO Metropolitan Transportation Planning (MTP) update. According to the Federal Railroad Association, from January 2011 through December 2015, there have been 8 incidents at rail crossings in Kootenai County within the corridor, two of the reported accidents were fatalities. Overall, the state reported 85 highway-rail incidents statewide which equates to nearly 1/6 of all rail crossings in Idaho as compared to the previous reported railroad accidents of 42 incidents within Kootenai County and 218 statewide from January 2000 through March 2010 (nearly 1/5 of all statewide accidents). The table below shows the railroad incidents that have occurred within the SH 41 corridor. These statistics continue to support the importance of KMPO's "Bridging the Valley" initiative described in Section 1 of our KMPO Metropolitan Transportation Plan (www.kmpo.net).

Table 26 - Railroad Accidents 2000 - 2015

Railroad incidents (2000 through 2015) within the Highway 41 Master Plan Corridor

Grade Crossing Collision Summary (January 1, 2000 through December 31, 2015)						
Railroad	Year/s	Grade Crossing	Collisions			
			Total[a]	Fatality[b]	Injury[b]	PDO[b]
BNSF*	2005	Mill St	2	1		1
BNSF*	2006	Greensferry Rd	1			1
UP*	2004	Greensferry Rd	1			1
UP*	2007	Meyer Rd	1	1		
Totals			5	2	0	3

* Railroad incidents ONLY within Hwy 41 Mast Plan Corridor

There are available ways to promote safety throughout the Highway 41 corridor. The improvements planned for the corridor (signalization, access control, and median barriers) should help minimize the potential for accidents within the corridor, although it is hard to predict what will occur in a 20-year timeframe with a large increase in traffic. However, no additional improvements or recommendations are offered on the basis of the accident summaries at this juncture.

Capacity Improvements

Several capacity improvements and refinements are proposed as a function of this plan for Highway 41 and the primary intersecting roadways. The improvements were developed based upon the Project Team meetings with ITD, the Cities of Post Falls and Rathdrum, Kootenai County, and the Post Falls Highway District. The improvements / refinements were determined to be reasonable and may be implemented based upon a variety of public and private funding sources.

The improvements are proposed to accommodate the growth in traffic that is likely to occur as the result of this update due to the normal increase of traffic on Highway 41 and the additional development that will occur within and between the Cities of Post Falls and Rathdrum.

The improvements are the result of preliminary forecast analyses of future capacity restraints and Project Team discussions concerning local and regional needs. Not all of the proposed improvements would be the function of this plan, as there are projects that are likely to occur separately, or in conjunction, with other planning/improvement efforts such as those that will occur with a similar US 95 project. Tables 31 & 32, provide a summary of improvements for; the proposed Highway 41 corridor, adjacent primary roadways and can be used in conjunction with the following discussion of improvements.

State Highway 41

State Highway 41 is currently a two- to four-lane roadway with generally 100-foot Right of Way (ROW) between Seltice Way and Poleline Ave. North of Poleline Ave. the highway reduces to two lanes with varying ROW to the City of Rathdrum. Left turn lanes are provided at both Prairie and Hayden Avenues.

Proposed improvements include four lanes from Seltice Way to Rathdrum with a 100 to 140- foot ROW with 12 or 14 foot-wide lanes (depending on roadway section) and a 16-foot median restriction that will only allow left turns at signalized principal roadways and selected ½-mile access locations. Left turns from Highway 41 would also be allowed at signalized intersections, but not from the local cross streets.

The right-of-way required for the proposed improvements along SH 41 from; Mullan Avenue to Boekel Road will be determined during the design of the segmented projects which will be prior to the beginning of construction for each segment. Right-of way questions should be directed to ITD, District 1.

Right turns will be allowed off east/west access roads along the highway that are not signalized. Improvements would also include 11-foot swales for stormwater runoff and a 12-foot paved bicycle/pedestrian pathway on one or both sides of the roadway (depending on roadway section). Future proposed traffic signals along the corridor are anticipated at; 16th, Bluegrass/Hope, Harvest, Wyoming, Ok Corral, Lancaster and Nagel Lane. The signals would allow for protected/exclusive left turns, which mean that designated left turn lanes would be provided or constructed on all intersection approaches. Designated right turn lanes would be provided at arterial intersections on both Highway 41 and the intersecting collector/arterial streets.

Urban improvements along SH 41 such as; roadway illumination, multi-use trail, curb & gutter, etc.

Signals are planned along the corridor at ½ mile and 1 mile spacing's. Comments have been received inquiring whether or not roundabouts are an option in lieu of signals. ITD has responded that the department is open to possible roundabouts, but only "if" design criteria can be met depending on; the volume of traffic, wheel base size of vehicles, speeds, right-of-way requirements, etc.

Backage Roads

A network of secondary access roads are proposed with the plan to provide access to future development projects. "Backage" roads would be located approximately ¼ mile from the east and west of Highway 41 and run parallel to the highway. Both the ¼ mile backage roads and the ½ mile backage roads would be designated as "local streets". The ¼ mile backage roads would extend from 12th Ave. on both sides of the highway north to Rathdrum. The quarter-mile roads will serve as local access to properties fronting on

Highway 41 and will provide access to intersecting signalized arterials for access to Highway 41 for left turn movements. The half-

mile road will run from Horse haven/20th Ave. on the east side of the highway and from Mullan Ave. on the west side to Rathdrum. The east/west access roads will connect the "Backage" roads with Highway 41 and will be located approximately every ¼ mile between Poleline and Lancaster Ave., Connectivity of the proposed roadways will be limited in the vicinity of the railroad tracks to limit uncontrolled crossings of the rail lines. Future realignment or abandonment of the rail would allow for the completion of the roadways for cross-Prairie access.

The "Backage" and access roads should be constructed with a minimum of two 12 foot travel lanes with an 80 to 100-foot ROW. The ROW will also support drainage swales, utilities, and a 10-foot minimum pedestrian/bikeway path on one or both sides of the roadway. The pedestrian path should be located at a sufficient distance from the roadway so that future widening of the road will not affect perpendicular alignments. Backage road design is subject to City standards and subject to change based on actual development patterns and travel demands.

Access Control Management & Implementation

Idaho Transportation Department (ITD) has developed new access controls for the State highway system. The Highway 41 Corridor Master Plan is based upon these guidelines, but has been modified / revised to incorporate the recommendations of the Project Team, which includes representatives from ITD. Highway 41 will be a principal arterial with multiple travel lanes. The ITD access guidelines are outlined under Idaho Administrative Code (IDAPA) IDAPA 39.03.42 and are included in the appendices of this plan. The IDAPA control criteria policies dictate that intersections (with or without signals) will be allowed every ½ mile within urban areas and every 1-mile within rural areas. As such, signals are only allowed every ½ mile on Highway 41 from Mullan Ave. to Harvest Ave. (urban section), and every 1-mile, from Harvest Ave. to SH 53 (rural section). The access modification includes the allowance of an un-signalized right in/right out only access intersections every ¼ mile on Highway 41 between primary signalized intersections, along the entire highway between Seltice Way and SH 53.

The Idaho Department of Transportation developed standards needed to protect public health, safety, and welfare to maintain smooth traffic flow while providing access to destinations; to maintain and protect the integrity of the design and construction of the State Highway System; and to maintain and protect the functional level of the State Highway System while meeting transportation needs and interests of adjoining land development. Access management includes:

- **Limiting the number of conflict points**
- **Regulating the spacing and design of approaches, turnouts, and intersections, medians and median openings, and traffic signals and interchanges;**
- **Regulating the encroachment within State Highway rights-of-way for signs, memorials, and decorations, urban improvements, landscaping, farming, and irrigation, and turnouts and parking facilities; and**
- **Regulating the encroachment within the State Highway rights-of-way for utility installations, adjustments, relocations, removals and maintenance.**

Requests for new approaches may be permitted. Applications for new approaches on the State Highway must be submitted by the owner(s) or authorized representative of property abutting the State highway right-of-way.

When permitting new approaches the maximum number of approaches should be addressed and the number of approaches reduced to a minimum. This can be accomplished through the use of frontage roads, joint use approaches or the elimination of unnecessary approaches. The Idaho Department of Transportation's goal is four (4) approaches per side per mile in Urban areas and three (3) approaches per side per mile in rural sections. This would include all existing approaches plus any additional approaches. Minimum spacing standards must meet requirements stated in ITD's IDAPA 39.03.42, dated March of 2013.

Access Control Management & Implementation (Continued)

There is different access types than can be identified, based upon the functional classification of a highway, arterial, or roadway. ITD has the authority to issue and control new and existing access permits for Highway 41, while local jurisdictions and the Post Falls Highway District control roadways within their jurisdiction. Approval of the Federal Highway Administration is required before access can be allowed on Interstates or Highways of National Significance. All attempts will be made to reduce /adjust existing access to conform to access control standards, but it is anticipated at this juncture that this will only be enforced with roadway improvements (reconstruction, realignment, widening, etc.). Control of all future access points and regulatory control standards on Highway 41 will be implemented through the adoption of this Plan by the Idaho Transportation Board.

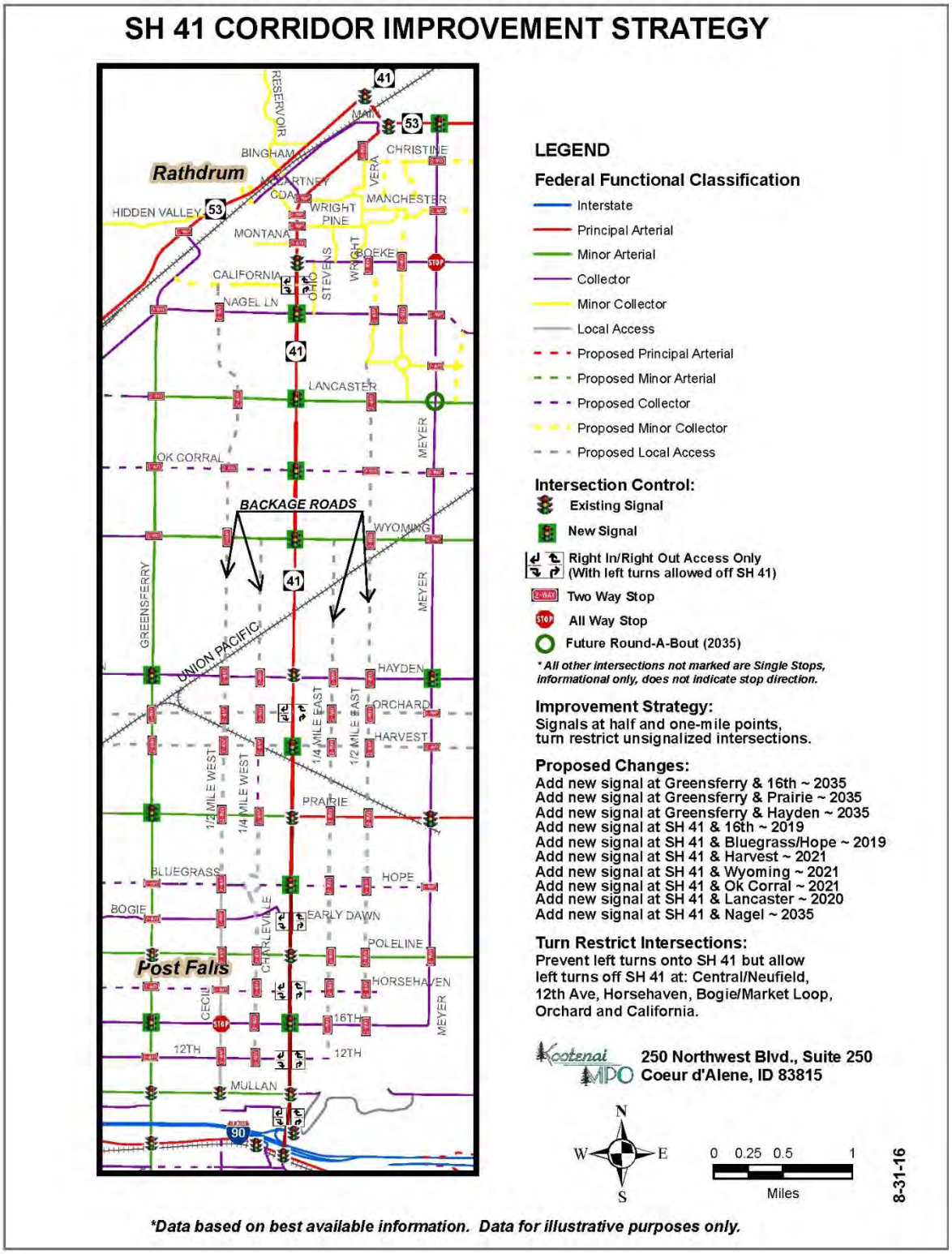
The Federal Highways Administration made revisions to the Highway Functional Classification: Concepts, Criteria and Procedures 2013 Edition guidebook (located in the documents section at http://www.fhwa.dot.gov/policy/ohpi/hpms/fchguidance.cfm The most significant change is the reduction of the number of functional classification codes due to the consolidation of rural and urban designations. The revised functional classification codes now are:

- 1 = Interstate
- 2 = Other Freeways and Expressways
- 3 = Other Principal Arterial
- 4 = Minor Arterial
- 5 = Major Collector
- 6 = Minor Collector
- 7 = Local Roads

The allowable distance between intersecting roadways, signals, access intersections, and driveways is dependent upon the access type (again, this is based upon the federal functional classification of the road way) and the urban or rural location of the access. Detailed spacing criteria can be viewed in IDAPA's 39.03.42, "Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way". Highway 41 is a Principal Arterial from Seltice Way to SH 53, it is a multi-lane urban and rural (depending upon location) principal arterial highway governing all existing or proposed accesses (intersections, access intersections, and driveways) on Highway 41.

The access control criteria dictates that intersections (with or without signals) will be allowed every ½ mile within urban areas and every 1-mile within rural areas. As such, signals are only allowed every ½ mile on Highway 41 from Mullan Ave. to Prairie Ave. (urban section), and every 1-mile from Prairie Ave. to Lancaster Ave. (rural section). A special allowance by the ITD Board is requested to allow un-signalized right in / right out only access intersections every 1 /4 mile on Highway 41 along the entire highway between Seltice Way and Boekel Road. Proposed signal s pacing and access intersection locations have been developed based upon future consideration by the ITD Board. The corridor improvement strategy plan is in Figure 46, below:

Figure 46 - Corridor Improvement Strategy Plan



The Project Team has developed an access plan that will conform to ITD standards and roadway improvements, yet provide sufficient access to existing and proposed developments within the corridor. The following summary provides ITD's proposed intersection controls and access restrictions:

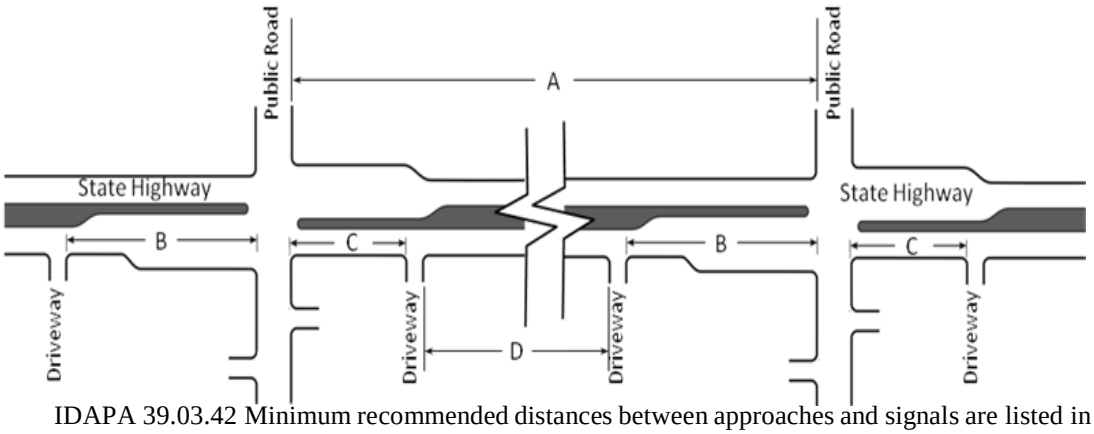
Table 27 - Summary of Proposed Intersection Controls & Access Restrictions SH 41

Summary of Proposed Intersection Controls and Access Restrictions on Highway 41		
Intersection Highway 41 @	**Control Type**	**Restrictions**
Seltice Way	Signal	Unrestricted movements
Westbound I-90 Ramp	Signal	Unrestricted movements
Mullan Ave.	Signal	Unrestricted movements
12th Ave.	East-west stop-control	Restricted east-west *left* turns
16th Ave.	Signal	Unrestricted movements
20th/Horsehaven Ave.	East-west stop-control	Restricted east-west *left* turns
Poleline Ave.	Signal	Unrestricted movements
Bogie/Early Dawn	East-west stop-control	Allow right-in/right- out only
Bluegrass/Hope Lane	East-west stop-control	Unrestricted movements
Killdeer Lane	East-west stop-control	Allow right-in/right-out only
Prairie Ave.	Signal	Unrestricted movements
Harvest Ave. East/West Access Road, 1/4 mile north of Prairie	Signal ,WB limited by rail line proximity	Unrestricted movements
Orchard Ave. East/West Access Road, 1/4 mile south of Hayden	East- west stop-control	Allow right-in/right-out only
Hayden Ave.	Signal	Unrestricted movements
East/West Access Road, 1/4 mile north of Hayden	East-west stop-control	Allow right-in/right-out only
Wyoming Ave.	Signal	Unrestricted movements
Ok Corral - East/West Access Road, 1/4 mile north of Wyoming	Signal	Unrestricted movements
East/West Access Road, 1/2 mile north of Wyoming (Possible Future Road)	East-west stop-control	Allow right-in/ right-out only
East/West Access Road, 1/4 mile south of Lancaster (Possible Future Road)	East-west stop-control	Allow right-in/right-out only

Lancaster Ave.	Signal	Unrestricted movements
East/West Access Road, 1/4 mile north of Lancaster	East-west stop-control	Allow right-in/right-out only
Nagel Lane	Signal	Unrestricted movements
California St	East-west Stop Control	Allow right-in/right out only
Boekel Road	Signal	Unrestricted movements
Montana St	Two-way Stop	Unrestricted movements
Pine St	Two-way Stop	Unrestricted movements
Coeur d'Alene St	Two-way Stop	Unrestricted movements
Crenshaw St	Two-way Stop	Unrestricted movements
McCartney/Wright St	Two-way Stop	Unrestricted movements
Ohio St	Two-way Stop	Unrestricted movements
Alabama St	Two-way Stop	Unrestricted movements
Stevens St	Two-way Stop	Unrestricted movements
Washington St	Two-way Stop	Unrestricted movements
Vernon St	Two-way Stop	Unrestricted movements
Vera St	Two-way Stop	Unrestricted movements
Main St	Two-way Stop	Unrestricted movements
SH 41/SH 53 Junction	Signal	Unrestricted movements

State Highway 41 is classified as a Statewide Route as defined in the Idaho Administrative Procedures Act, Chapter 39, Section 3.42 (IDAPA 39.03.42). Section 400 of the Rule specifies the spacing of approaches (accesses) along state highways and includes a table and an accompanying Figure showing the distances between approaches. The Statewide Route Area Types that apply to SH-41 are as follows: Seltice Way (MP 0.00) to 800 feet north of Mullan Ave. (MP 0.61) is Urban with a speed of 35 miles per hour; 800 feet north of Mullan Ave. (MP 0.61) to Prairie Ave. (MP 2.46) is Urban with a speed limit of 45 mph and 55 mph; Prairie Ave. (MP 2.46) to the south Rathdrum city limit (MP 5.00) is Transitional; south Rathdrum city limit (MP 5.00) to Nagel Road (MP 6.10) is Urban with a speed limit of 55 mph; Nagle Road (MP 6.10) to the SH-53 junction (MP 7.72) is Urban with a speed limit of 35 mph or less (25 mph school zone when lights are flashing – MP 6.65 to MP). The spacing distances are as shown in Table 28 as listed below.

Figure 47 - Public Road/Driveway Spacing Diagram - IDAPA



IDAPA 39.03.42 Minimum recommended distances between approaches and signals are listed in the table below:

Table 28 - IDAPA 30.03.42 Access Spacing Requirements

IDAHO ADMINISTRATIVE CODE
Idaho Transportation Department

IDAPA 39.03.42 - Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way

TABLE 1 – ACCESS SPACING*

HIGHWAY TYPE	AREA TYPE	Signalized Road Spacing	Public Road Spacing (A)	Driveway Distance Upstream From Public Road Intersection (B)	Driveway Distance Downstream From Unsignalized Public Road Intersection (C)	Distance Between Unsignalized Accesses Other Than Public Roads (D)
Interstate	All	Accessible only by interchanges (ramps) and requires approval by the Board and Federal Highway Administration.				
Freeway	All	Accessible only by interchanges (ramps).				
Expressway	All	Accessible only at locations specified by the Department.				
Statewide Route	Rural	5,280 ft	5,280 ft	1,000 ft	650 ft	650 ft
	Transitional	5,280 ft	2,640 ft	760 ft	500 ft	500 ft
	Urban >35 mph	2,640 ft	1,320 ft	790 ft	500 ft	500 ft
	Urban ≤35 mph	2,640 ft	1,320 ft	790 ft	250 ft**	250 ft**
Regional Route	Rural	5,280 ft	2,640 ft	1,000 ft	650 ft	650 ft
	Transitional	2,640 ft	1,320 ft	690 ft	360 ft**	360 ft**
	Urban >35 mph	2,640 ft	660 ft	660 ft	360 ft**	360 ft**
	Urban ≤35 mph	2,640 ft	660 ft	660 ft	250 ft**	250 ft**
District Route	Rural	2,640 ft	1,320 ft	760 ft	500 ft	500 ft
	Transitional	2,640 ft	660 ft	660 ft	360 ft**	360 ft**
	Urban >35 mph	1,320 ft	660 ft	660 ft	360 ft**	360 ft**
	Urban ≤35 mph	1,320 ft	660 ft	660 ft	250 ft**	250 ft**

*Distances in table are minimums based on optimal operational and safety conditions such as adequate sight distance and level grade. Definitions of spacing designated by (A), (B), (C), and (D) are represented on Figure 1.

** Where the public road intersection or private access intersection is signalized, the distances in the table are for driveways restricted to right-in/right-out movements only. For unrestricted driveways the minimum distance shall be 500 feet from a signalized intersection.

(3-27-13)

Idaho Department of Transportation District 1 Requirements:

One of the access management principles emphasized in the IDAPA rule is to "Reduce conflicts associated with access points through the application of channelization, auxiliary lanes, joint-use approaches, frontage and other local roads, restricted on-street parking and off-street traffic circulation."

Using the suite of tools recognized by the rule, each property's access and circulation needs will be reviewed primarily during workup of ITD highway improvement projects. ITD will also review access and circulation needs in conjunction with encroachment permit applications and during review by ITD of land use proposals made through local government land use authorities. A Traffic Impact Study may be required as an element of an encroachment permit application to determine the operational effects and appropriate traffic impact mitigation of any proposed direct access/approach onto SH-41.

The goal of access management along SH-41 is to allow efficient and effective access to adjacent properties in a manner that encourages economic growth while at the same time providing good regional mobility and road network safety. The intent is to implement the access management principles in order to result in the least direct access to SH-41 between Seltice Way and Boekel Road as possible. If all or most of the properties adjacent to SH-41 take access from city streets or county roads rather than directly from SH-41 there will be equal economic opportunity for all properties. The highway operational results of implementing access management principles will be a safer highway with consistent travel speeds and high capacity.

When development or redevelopment is proposed on properties adjacent to SH-41, access to the property will primarily come from city streets or county roads rather than directly from SH-41. If, at the time of property development, a property does not have direct access to a city street or county road, interim direct access to SH-41 may be issued through an encroachment permit with the provision embodied in the permit that when the property has direct access to another public road or easement the direct access to SH-41 will be closed and obliterated.

When ITD develops and constructs improvements based on the typical section for SH-41 embodied in this Corridor Master Plan, right of way and access rights will be purchased from each property fronting on SH-41 within the highway project's limits and adjacent properties will access city streets or county roads rather than have direct access on SH-41. In purchasing the access rights, in cases where there is no other public road available to provide access to the property, an interim direct access to SH-41 may be granted with the provision embodied in the deed or agreement that when the property has direct access to another public road the direct access to SH-41 will be closed and obliterated.

Between Seltice Way and Mullan Ave., where there are few properties remaining undeveloped, access management principles will be implemented as properties develop or redevelop and the owners apply for encroachment permits and/or land use approvals. This section of SH 41 is not included in the improvements within this corridor master plan update and will be addressed at a later date by ITD. Further analysis is needed as mentioned previously on page 45.

Between Mullan Ave. and Prairie Ave., where there are many properties remaining undeveloped, ITD will be constructing full improvements based on the typical section in this Corridor Master Plan and implementing full access management principles.

Between Prairie Ave. and Boekel Road, where the majority of properties are presently in agricultural uses and have potential for predominately commercial development, with some residential development, access management principles will be implemented as properties develop or redevelop and the owners apply for encroachment permits and/or land use approvals.

Between Boekel Road and SH-53, where there are few properties remaining undeveloped, access management principles will be implemented as properties develop or redevelop and the owners apply for encroachment permits and/or land use approvals. Further analysis is needed as mentioned previously on page 45.

Access Management

- Improves safety
- Increases mobility
- Increases capacity
- Provides equal economic opportunity

Implementation

- Highway Improvement Project
  - Purchase right of way and access rights from each parcel fronting on SH-41
    - No direct access to SH-41 access to city streets or county roads exists for property
    - Permit interim direct access to SH-41 where no other access exists for property
    - Right-in, right-out movements only
    - Joint access with recorded cross easements between properties
    - Permit requires interim access to be closed and obliterated when access to city streets or county roads is in place

- For Property Development before a Highway Project is underway
  - Property donates right of way or agrees to full building setback
  - Permit interim direct access to SH-41 where no other access exists for property
    - Right-in, right-out movements only
    - Joint access with recorded cross easements between properties
    - Permit requires interim access to be closed and obliterated when access city streets or county roads is in place
    - Access rights will be purchased when a highway improvement project is undertaken

Access Management by Section of SH-41

- Seltice Way to Mullan Ave.
  - ITD install raised median or raised channelization
    - Existing accesses will be limited to right-in, right-out movements only
  - New or re-development of properties adjacent to SH-41
    - Combine accesses with adjacent properties
    - Right-in, right-out movements only
  - ITD upgrade or rebuild project
    - Purchase right of way and access rights from adjacent properties
    - Remove accesses where possible
    - Combine accesses with adjacent properties
    - Right-in, right-out movements only

- Mullan Ave. to Prairie Ave.
  - ITD Rebuild Project (KN ORN19372)
    - Purchase right of way and access rights from adjacent properties
    - Remove accesses where possible (properties access city streets)
    - Interim combined accesses with adjacent properties
    - Interim right-in, right-out movements only
    - Interim accesses will be closed and obliterated when access to city streets is in place
  - Property development prior to ITD project
    - Remove accesses where possible (properties access city streets)
    - Combine accesses with adjacent properties based on IDAPA spacing
    - Right-in, right-out movements only, based on IDAPA spacing
    - Access rights will be purchased when a highway improvement project is undertaken

- Prairie Ave. to Boekel Road
  - Property development prior to ITD project
    - Remove accesses where possible (properties access county roads or city streets)
    - Interim combined accesses with adjacent properties based on IDAPA spacing
    - Interim right-in, right-out movements only, based on IDAPA spacing
    - Access rights will be purchased when a highway improvement project is undertaken
    - Interim accesses will be closed and obliterated when access to city streets or county roads is in place

- Boekel Road to SH-53
  - Property development or redevelopment
    - Remove accesses where possible (properties access city streets)
    - Combine accesses with adjacent properties
    - Right-in, right-out movements only

Direction on the access management section and implementation along SH 41 came from the Idaho Department of Transportation, District 1 Planning Section. The department is currently updating their access management policies.

Table 29 - ITD Access Management Implementation Plan - Principal Arterial Route

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
Seltice Way to Mullan Avenue	0 to 0.45								No new approaches		
Seltice Way/Eastbound on ramp	0	Yes	Yes	No	No	940 to wb ramps					
Westbound ramp pair	0.19	Yes	Yes	Yes	No	333 to pvt approach; 940 to Seltice					
Private residential approach (right side)	0.25	Yes	No	No	No	165 to Neufeld			Reroute to commercial approach at 0.28	Raised median	Crash rate
Central/Neufeld	0.28	Yes	Yes	Yes	yes	306 to comm appr; 498 to wb ramps			Right in/right out only	Raised median	Crash rate
Commercial approach (east side)	0.33	Yes	Yes	Yes	No	225 to Sonic			Right in/right out only	Raised median	Crash rate
Del Taco Drivethrough	0.35	Right out	No	No	No	420 to Central			Eliminate – use drive through to Highland Crossing		Crash rate
Sonic Approach	0.38	Yes	Yes	No	No	215 to 76 sta			Right in/right out only	Raised median	Crash rate
Highland Crossing South Approach	0.38	Right in/right out	No	No	No	110 to Del Taco drive thru			Right in/right out only	Raised median	Crash rate

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
Highland Crossing North Approach	0.4	Right in/right out	No	No	No	154 to HC south appr			Right in/right out only	Raised median	Crash rate
76 Station Approach	0.42	Yes	No	No	No	155 to Mullan			Right in/right out only	Raised median	Crash rate
Mullan Avenue (signalized)	0.45	Yes	Yes	Yes	yes	250 to RC; 180 to HC appr					
Mullan Avenue to 12th Avenue	0.45 to 0.7								No new approaches		
River City Center South Approach	0.50	Yes	Yes	Yes	No	243 to RC middle			Right in/right out only, eliminate-circulate to n-s parallel street	Raised median	Crash rate
Former mobile park approach (west side)	0.53	Yes	Yes	Yes	No	448 to Mullan			Close/eliminate	Administrative	Administrative/ redevelopment
River City Center Middle Approach	0.54	Yes	Yes	Yes	No	328 to RC north			Right in/right out only, eliminate-circulate to n-s parallel street	Raised median	Crash rate
Field approach (west side)	0.57	Yes	Yes	Yes	No	240 to former mobile park approach			Close/eliminate	Administrative	Administrative
Private Approach (west	0.59	Yes	Yes	Yes	Yes	448 to Mullan			Right in/right out only,	Raised median	Crash rate

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
side)									eliminate-circulate to n-s parallel street		
Residence/business (west side)	0.59	Yes	Yes	Yes	Yes	115 to field approach			Right in/right out only; use storage site's approach on 12th Avenue	Raised median	Crash rate; major project
River City Center North Approach	0.6	Yes	Yes	Yes	yes	195 to 12th			Right in/right out only, eliminate-circulate to n-s parallel street	Raised median	Crash rate
Storage site approach (west side)	0.63	Yes	Yes	Yes	No	220 to res approach			Right in/right out only; use existing access on 12th Avenue	Raised median	Crash rate; major project
12th Avenue	0.7	Yes	Yes	Yes	Yes	524 to south Chateau; 300 to storage			Right in/right out, left in	Channelized median	Crash rate
12th Avenue to Poleline Avenue	0.7 to 1.46								No new approaches		
Private Approach (west side)	0.77	Yes	Yes	Yes	No	467 to 12th			Right in /right out only, reroute to 12th	Raised median	Crash rate

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
									Avenue		
Chateau Mobile Home Village South Approach	0.79	Yes	Yes	Yes	no	118 to Chateau north			Right in/right out only, reroute to 16th Avenue	Raised median	Crash rate
Chateau Mobile Home Village North Approach						680 to 16th Avenue					
16th Avenue	0.95	Yes	Yes	Yes	Yes	660 to joint commercial			Full movements	Signalized	Crash rate
Joint Use Commercial Approach (east side)	1.08	Yes	Yes	Yes	No	652 to Horsehaven			Right in/right out only	Raised median	Crash rate
Old Residential Approach (west side)						660 to 16th					
Old field approach (west side)						212 to old residential					
Horsehaven Avenue	1.2	Yes	Yes	Yes	Yes	683 to residential			Right in/right out, left in	Channelized median	Crash rate
Residential Approach (east side)	1.34	Yes	Yes	Yes	No	636 to Poleline			Right in/right out only	Raised median	Crash rate
Utility (KE) Approach (west side)	1.4	Yes	No	No	No	100 to commercial					

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
Commercial Approach (west side)	1.38	Yes	No	No	No	210 to *EXCEL*					
Commercial Approach (west side, *EXCEL*)	1.36	Yes	Yes	Yes	No	831 to Horsehaven			Right in/right out only	Raised median	Crash rate
Poleline Avenue (signalized)	1.46	Yes	Yes	Yes	Yes	545 to commercial; 175 to KE					
Poleline Avenue to Prairie Avenue	1.46 to 2.45								No new private approaches		
Commercial Approach (east side)	1.53	Yes	No	No	No	480 to recycler				Raised median	Crash rate
Commercial Approach (Conoco - west side)	1.53	Yes	Yes	Yes	No	395 to Poleline			Right in/right out only	Raised median	Crash rate
Commercial Approach (Sun Rental – west side)	1.59	Yes	Yes	Yes	no	268 to Conoco			Right in/right out only	Raised median	Crash rate
Commercial Approach (east side recycler)	1.65	Yes	No	No	No	293 to Early Dawn					
Early Dawn	1.7	Yes	Yes	Yes	Yes	662 to res approach			Right in/right out, left in	Channelized median	Crash rate
Market Loop (Tullimore)	1.7	Yes	Yes	No	No	658 to Sun Rental			Right in/right out, left in	Channelized median	Crash rate

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
Residential Approach (east side)	1.84	Yes	Yes	Yes	Yes	691 to Hope			Right in/right out, left in	Channelized median	Crash rate
Hope Avenue	1.97	Yes	Yes	Yes	No	616 to Peck			Full movements	Signalized	Crash rates, west leg of Hope
Commercial Approach (Peck – east side)	2.09	Yes	Yes	Yes	No	668 to Rest approach			No Approach – route to Killdeer Avenue	New road – Killdeer Avenue	New road connection
Residential Approach (east side)	2.12	Yes	Yes	Yes	No	1321 to Prairie Ave			Right in/right out, left in	Channelized median	Crash rate
New Road (Kildeer Avenue)	2.12	-	-	-	-	1280 to Market Loop			Right in/right out, left in	New road – Killdeer Avenue	New road connection
Prairie Avenue (signalized)	2.45	Yes	Yes	Yes	Yes	5280 to Hayden; 2681 to Kildeer					
Prairie Avenue to Hayden Avenue	2.45 to 3.46								No new private approaches		
Commercial Approach (west side)	2.64	Yes	Yes	Yes	No	935 to Prairie Ave			No approach – route to new road to the north	New road to the north	New road connection
New Road (west side)	2.72	-	-	-	-	1705 to Commercial			Right in/right out, left in	New road	New road connection
UP Railroad Crossing (spur)	2.85	No	No	No	No	Na			Remove crossing	Relocate propane tanks	New tank location found

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
New Road (Harvest Avenue?)	2.95	-	-	-	-				Full Movement	Traffic Signal	New road connection
New Road (Orchard Avenue)	3.2	-	-	-	-	1320 to Hayden Ave			Right in/right out, left in	New road (Orchard Avenue)	New road connection
Field Approach	3.27	Yes	Yes	Yes	No				No approach –route to new road (Orchard Avenue)	New Road to the south	New Road connection
Residential Approach (west side)	3.38	Yes	No	No	No	2215 to new road (Orchard)			Right in/right out, reroute to Hayden	Raised channelization at Hayden	Crash rate; major project
Hayden Avenue (signalized)	3.45	Yes	Yes	Yes	Yes	2451 to source approach; 425 to res					
Hayden Avenue to Lancaster Avenue	3.45 to 5.46								No new private approaches		
Commercial Approach (Gravel Source – east side)	3.93	Yes	Yes	Yes	No	105 to UP crossing			Reroute to Wyoming Avenue or combine with grain elevator approach if UP line abandoned	Reroute to Wyoming Avenue	Crash rate, highway expansion

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
UP Railroad Crossing (mainline)	3.95	No	No	No	No	182 to grain elevator			Eliminate crossing	Grade separation	Crash rate,
Commercial Approach (east side, grain elevator)	3.99	Yes	Yes	Yes	No	2224 to field approach			No approach (if UPRR is abandoned, could be full access with signal)	Relocated grain storage facility	Highway expansion
Field approach (east side)	4.41	Yes	Yes	Yes	No	310 to Wyoming Avenue					
Residential approach	4.42	Yes	Yes	Yes	No	5054 to Hayden Ave			Close/eliminate	Use Wyoming Ave approach	Highway expansion
Wyoming Avenue	4.45	Yes	Yes	Yes	Yes	2805 to Frontier tower			Full movements	Traffic signal	Warrants
New Road	4.71	-	-	-	-				Right in/right out, left in	New road	New road connection
New Road	4.96	-	-	-	-				Full movements	Traffic signal	New road constructed
New Road	5.21	-	-	-	-				Right in/right out, left in	New road	New road connection
Lancaster Avenue	5.46	Yes	Yes	Yes	Yes	3306 to Nagel; 5265 to Wyoming			Full movements	Traffic signal	Warrants
Lancaster Avenue to Boekel Road	5.46 to 6.48								No new private approaches		
Residential Approach (west side - Thayer)	5.55	Yes	Yes	Yes	No	400 to Lancaster			Reroute to Lancaster	Purchase of access	Highway expansion

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
New Approach	5.72	-	-	-	-				Right in/right out	New road	New road connection
Residential Approach (west side - Thomas)	5.79	Yes	Yes	Yes	No	1300 to Thayer			? reroute to new road		
Residential Approach (west side - Meyer)	5.84	Yes	Yes	Yes	No	236 feet to Thomas			? reroute to new road		
New Road	5.98	-	-	-	-				?		
Nagel Road	6.1	Yes	Yes	Yes	Yes	1076 to California; 1360 to Meyer				Traffic signal	
Residential Approach (west side – Englestad)	6.15	Yes	Yes	Yes	No	270 to Nagel			Reroute to Nagel Road		
California Street	6.3	Yes	Yes	Yes	Yes	896 to Boekel; 806 to Englestad					
Boekel Road	6.48	Yes	Yes	Yes	Yes						
Boekel Road to SH-53	6.48 to 7.72										
Commercial Approach (east side – Zip's Conoco)	6.56	Yes	Yes	Yes	No						
Montana Street (west side)	6.61	Yes	Yes	Yes	No						
Commercial Approach (east side)	6.64	Yes	Yes	Yes	No						

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
Commercial Approach (east side)	6.68	Yes	Yes	Yes	No						
Commercial Approach (east side)	6.7	Yes	Yes	Yes	No						
Commercial Approach (east side)	6.71	Yes	Yes	Yes	No				Reroute to Pine Street		
Pine Street	6.73	Yes	Yes	Yes	No						
Pedestrian Crossing	6.74	No	No	No	Yes w/RRFB						
5th Street/Coeur d'Alene Street/Fivepoint Street	6.79	Yes	Yes	Yes	Yes						
Crenshaw Street	6.86	Yes	Yes	Yes	No						
Wright Street/ McCartney Street	6.92	Yes	Yes	Yes	Yes						
Commercial Approach (west side)	6.95	Yes	No	No	No						
Ohio Street (east side)	7.02	Yes	Yes	Yes	No						
Commercial Approach (east side)	7.06	Yes	Yes	Yes	No						
Commercial	7.07	Yes	Yes	Yes	Yes						

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
Approach (east and west sides)											
Residential Approach (east side)	7.1	Yes	Yes	Yes	Yes						
Bard Street/Alabama Street/ Lewis Street	7.12	Yes	Yes	Yes	Yes						
Commercial Approach (east side – Texaco)	7.18	Yes	Yes	Yes	Yes						
Stevens Street	7.2	Yes	Yes	Yes	Yes						
Residential Approach (west side)	7.26	Yes	Yes	Yes	Yes						
Washington Street	7.3	Yes	Yes	Yes	Yes						
Pedestrian Crossing	7.31	No	No	No	Yes						
Commercial Approach	7.34	Yes	Yes	Yes	No						
Vera Street (east side)	7.38	Yes	Yes	Yes	Yes						
Middle School Approach (west side) w/cross walk	7.38	Yes	Yes	Yes	Yes						

ITD Access Management Implementation Plan - Principal Arterial SH 41 Route (Continued):

SH-41 Corridor Master Plan
Implementation Plan - Access Management
Highway Type: Principal Arterial – Seltice Way to SH-53 June 2015

Area (South to North - Ascending Milepoints)	SH-41 Milepoint (Approx)	Allowed movements				Distance to next downstream approach	EP #	Meet IDAPA	Future changes	Means of change	Trigger for change
		Right in/right out	Left in	Left out	Crossing	Feet c-c		Yes/No			
School Approaches (east and west sides) w/cross walk	7.55	Yes	Yes	Yes	Yes						
Commercial Approach (west side - McDonalds)	7.58	Yes	Yes	Yes	No						
Commercial Approach (west side - McDonalds)	7.64	Yes	Yes	Yes	No						
Main Street	7.66	Yes	Yes	Yes	No						
SH-53	7.72	Yes	Yes	Yes	No						

Table 30 - Access Management Implementation Plan – Roadway Plan

SH-41 Corridor Master Plan
Implementation Plan – Roadway
Highway Type: Expressway – Seltice Way to Boekel Road; Statewide Route – Boekel Road to SH-53 April 2015

Road	Milepost range	Existing section	Interim section	Ultimate section	Trigger for change
SH-41	0.00 to 0.45	Four lanes, left turn lanes at I-90 ramps, c+g 64', signals at Seltice and westbound ramp		Same	None
	0.45 to 0.7	Four lanes, TWLTL, left turn lanes at Mullan, c+g 66', signal at Mullan		Four lanes, raised median, left and right turn lanes at Mullan, c+g 66', signal at Mullan	
	0.7 to 1.46	Two lanes northbound to Poleline, one lane southbound, shoulders, 42' pavement, signal at Poleline		Four lanes, raised median, left and right turn lanes and signals at Mullan, 16th Ave., Poleline, turning movement restrictions at 12th Ave. and Horsehaven	
	1.46 to 2.45	Two lanes, left and right turn lanes at Poleline and Prairie, 32' pavement, signal at Prairie		Four lanes, raised median, left and right turn lanes and signals at Poleline, Hope Ave., Prairie Ave., turning movement restrictions at Early Dawn Ave. and Kildeer Ave.	
	2.45 to 3.46	Two lanes, left and right turn lanes at Prairie and Hayden, 32' pavement, signal at Hayden		Four lanes, raised median, left and right turn lanes and signals at Prairie Ave., Harvest Ave.(?) Hayden Ave., turning movement restrictions at Gallop(?) Ave. and Orchard Ave.	
	3.46 to 5.46	Two lanes, left and right turn lanes at Hayden, 32' pavement		Four lanes, raised median, left and right turn lanes and signals at Hayden Ave., Wyoming Ave., New Road, Lancaster Ave., turning movement restrictions at New Road (1/4 mile north of Hayden Ave.	
	5.46 to 6.48	Two lanes, left and right turn lanes at Nagel, California, Boekel, 32' pavement, signal at Boekel		Four lanes, raised median, left and right turn lanes and signals at Lancaster Ave., Boekel Rd., turning movement restrictions at two new roads ¼ and ½ mile north of Lancaster Ave.	
	6.48 to 7.72	Two lanes, left and right turn lanes at Boekel, TWLTL to MP 6.65, 32' pavement, separated pathway both sides			

ITD Access Management Implementation Plan – Roadway Plan (Cont.)

SH-41 Corridor Master Plan
Implementation Plan – Roadway
Highway Type: Expressway – Seltice Way to Boekel Road; Statewide Route – Boekel Road to SH-53 April 2015

Road	Milepoint range	Existing section	Interim Section	Ultimate section	Trigger for change
Seltice Way		West leg: two left turn lanes, two eastbound through lanes, two westbound through lanes; East leg: two westbound through lanes, one westbound right turn lane, two eastbound through lanes, Centennial Trail crossing; traffic signal			
East bound on-ramp		One lane from SH-41, one lane from Seltice – merge to one lane onramp			
West bound on/off ramp		One left turn lane off, one right turn lane off, one lane on, raised median			
Central Ave.		Two lane (right out only)			
Neufeld Ln.		Two lane			
Mullan Ave.		West leg: two lane wb, three lane eb; East leg: two lane wb, one lane eb			
12th Ave.		Two lane			
16th Ave.		Two lane			
Horsehaven Ave.		Two lane			
Poleline Ave.		West leg: one lane wb, two lane eb; East leg: two lane wb, one lane eb			
Early Dawn Ave.		Two lane wb; one lane eb			
Market Loop		One lane wb; one lane eb (right out only)			
Hope Ave.		Two lane			

ITD Access Management Implementation Plan – Roadway Plan (Cont.)

SH-41 Corridor Master Plan
Implementation Plan – Roadway
Highway Type: Expressway – Seltice Way to Boekel Road; Statewide Route – Boekel Road to SH-53 April 2015

Road	Milepoint range	Existing section	Interim Section	Ultimate section	Trigger for change
Killdeer Ave.		Does not exist			
Prairie Ave.		West leg: one lane wb, two lane eb; East leg: two lane wb, one lane eb			
Gallop (?)		Does not exist			
Harvest Ave.		Does not exist			
Orchard Ave.		Does not exist			
Hayden Ave.		West leg: one lane wb, two lane eb; East leg: two lane wb, one lane eb			
New Road		Does not exist			
Wyoming Ave.		Two lane			
New Road		Does not exist			
New Road		Does not exist			
New Road		Does not exist			
Lancaster Ave.		Two lane			
New Road		Does not exist			
New Road		Does not exist			

ITD Access Management Implementation Plan – Roadway Plan (Cont.)

SH-41 Corridor Master Plan
Implementation Plan – Roadway
Highway Type: Expressway – Seltice Way to Boekel Road; Statewide Route – Boekel Road to SH-53 April 2015

Road	Milepoint range	Existing section	Interim Section	Ultimate section	Trigger for change
Nagel Ave.		Two lane			
California St.		Two lane			
Boekel Rd.		West leg: one lane wb, two lane eb; East leg: two lane wb, one lane eb			
Montana St.		Two lane			
Pine St.		Two lane			
5th St.		Two lane			
Coeur d'Alene St.		Two lane			
Five Point St.		Two lane			
Crenshaw St.		Two lane			
Wright St.		Two lane			
McCartney St.		Two lane			
Ohio St.		Two lane			
Bard St.		Two lane			
Alabama St.		Two lane			

ITD Access Management Implementation Plan – Roadway Plan (Cont.)

SH-41 Corridor Master Plan
Implementation Plan – Roadway
Highway Type: Expressway – Seltice Way to Boekel Road; Statewide Route – Boekel Road to SH-53 April 2015

Road	Milepoint range	Existing section	Interim Section	Ultimate section	Trigger for change
Lewis St.		Two lane			
Stevens St.		Two lane			
Washington St.		Two lane			
Vera St.		Two lane			
Main St.		Two lane			
SH-53		West leg: two lane eb, one lane wb; East leg: two lane wb, one lane eb			

Access Management / Development Review

Access management is a critical element of an efficient transportation system, and is supported by affected jurisdictions as a technique to promote continual traffic flow with minimal turning movements. Three separate transportation controls have been established, limiting access along the highway, including a "Memorandum of Understanding" and an Overlay Zone. The "Memorandum of Understanding" (MOU) between the City of Post Falls and ITD is the most concise and in-depth regulatory tool of the three controls.

The first tool is the MOU, a joint and collaborative agreement for access management of that portion of the Highway located between I-90 and Poleline Ave. The MOU established a set of uniform standards for obtaining right of way, limiting access, and road design that is endorsed and adopted by the City of Post Falls and ITD. The City of Rathdrum and ITD also executed an MOU regarding Highway 41. The City of Post falls and the Idaho Transportation Department will need to review their existing MOU for possible changes. The City of Post Falls currently has the understanding that there will be bike lanes on both sides of SH 41. The ITD roadway sections in this plan only show a multi-use path on the east side of SH 41 from Mullan Avenue to Prairie Avenue, the City of Post Falls has expressed that they want the original design with multi-use paths on both sides. During the public comment period, the public also expressed a desire for the non-motorized paths to be on both sides of SH-41. At this point in time, ITD is in the process of hiring a consultant for the final design of SH 41 and construction will begin on the first phase of the work along SH 41 to begin in 2019.

The second tool is Kootenai County's Highway 41 Overlay Zone (Article 18 of the Kootenai County Zoning Code). The Article significantly restricts access and provides setbacks for development along the Highway 41 from Prairie Ave. to Lancaster Ave.

The third control is ITD's State Highway Access Control Policy, dated November 27, 2002. The Policy (IDAPA 39.03.42) sets forth ITD's effort and intent to provide access control on State highways. The Policy sets limits on access and provides for access decisions to be determined by the State Traffic Engineer. The City of Post Falls follows their own access management policy for the backage roads and east-west roadways, which is Title 17.28.

Existing Access Control ~ Highway 41

The Idaho Transportation Department permits reasonable access along Highway 41(where allowed) and is regulated in conjunction with the Federal Highway Administration as well as coordinating with local agencies and in accordance with pertinent Idaho statute IDAPA 39.03.42. Access control is based on the functional classification of the roadway.

Development Standards

No development of private property driveways will be allowed on Highway 41. Zoning ordinances of the underlying jurisdiction govern the minimum setback for a development or private property driveway on an access or a "Backage" road. Setbacks for structures from Highway 41 are 150 feet from centerline, regardless of the underlying zone setback requirements. No property (which may consist of several contiguous lots or parcels) will have more than two driveway locations unless additional driveways are proven necessary on the basis of an engineering traffic study.

One developed access will be allowed from Highway 41 for agricultural use or as a secondary access for emergency services (not open for non-emergency uses). The access can be closed when the property is developed for residential or commercial use and can be closed at any time at the discretion of the agencies and ITD. All variance requests will be supported by an engineering traffic study. The scope for all traffic studies will be coordinated with the lead agency (Cities, County, and/or Highway District) and ITD, and will be reviewed by the same agencies.

It should be noted that construction of these roads will be primarily motivated and funded by development. Development will be responsible for frontage improvements that require the construction of adjacent "Backage"/access roads. If a "Backage"/access road or access connection to a major roadway is not provided at a desired site, then the development will have to be responsible for these improvements or select a location

with adequate infrastructure, at which point they may be required to contribute to pre-existing development agreements.

ITD will not have jurisdiction over access management of the backage roads, it will be the decision of the jurisdictional authority (either the City of Post falls and/or; the Post Falls Highway District or Lakes Highway Districts) in which those sections of roadways will exist. The backage roads will have a local street designation which will allow an alternative access for private driveways. Direct access onto the backage roads will not be provided, however alternative access (away from the backage road routes) will be allowed and will be determined at final design of the backage roads.

A summary of proposed intersection controls and access restrictions for the Highway 41 Corridor is summarized in Table 27 previously shown and can be reviewed in conjunction ITD's Access Management Requirements in this chapter.

Crossover Easements

Access control can also be accomplished through the shared use of common driveways and parking areas. Joined parking areas permit circulation between stores/uses without accessing public roadways. Shared rights are allowed through the use of reciprocal easements.

Traffic Signals

Traffic signals are currently located on Highway 41 at Seltice Way, the westbound I-90 ramp, and Mullan, Poleline, Prairie, and Hayden Avenues. Traffic signals are proposed at 16th, Hope, Wyoming, and Lancaster Avenues. The signals would allow for protected/exclusive left turns, which mean that designated left turn lanes would be provided/ constructed on all intersection approaches. Designated right turn lanes would be provided at arterial intersections on both, Highway 41 and the cross collector / arterial streets.

Roundabouts are being designed and constructed at various locations within Kootenai County. Within the 2035 regional model there are over 15 planned or already built roundabouts. Roundabouts are an alternative to signalizing an intersection.

ITD is open to constructing roundabouts at lower speed intersections along SH 41; however, roundabouts would be required to meet all the design criteria and be designed for commercial vehicles (probably designed for WB 67) for state routes as well as suitable for the proposed 4 lane cross section.

Prairie Ave. & McGuire Rd. Roundabout

Planned Roadway Projects

State Highway 41 is currently a two to four lane roadway with generally 100 foot right-of-way (ROW) between Seltice Way and Poleline Ave... North of Poleline Ave., the highway reduces to two lanes with varying ROW to the City of Rathdrum. Currently there are left turn lanes provided at; Mullan Ave., 16th Ave., Poleline Ave., Market Loop/Early Dawn, Prairie Ave., Hayden Ave., Wyoming Ave., Nagel Lane, Boekel Rd., Montana St., McCartney/Wright St., Vernon St., Vera St., Main St and the junction of SH41/53.

The plan proposes to improve State Highway 41 to a divided highway with four lanes from Seltice Way to Boekel, with a 100 to 140 foot right-of-way. The newly constructed section from ***Mullan to Prairie Ave.*** would have two - 12 foot wide lanes, two- 14 foot lanes, two foot curb and gutter, 11 foot swales on both sides of the roadway, a 12 foot bicycle/pedestrian pathway on the right side of the SH 41 roadway, with a 16 foot median restriction that will only allow left turns at principal roadways and the future selected ½ mile signal access locations (16th, Bluegrass/Hope). Construction for this section is scheduled for 2019. See typical roadway sections Figure 50 of this report.

The segment from Seltice Way to Mullan Ave. is also not included in the scope of construction along SH 41 at this time. That segment is dependent upon the scoping study currently underway by ITD along I-90 form Washington State Line to 15th St. and will most likely included the design for this section of SH 41. Contact ITD, District 1 for more information.

Left turns from SH 41 would be allowed at the signalized locations, but not from the local cross streets where no signal exists on SH 41. The local cross streets would provide right-in, right-out access only at; Covington/Neufield, 12th Ave., Horsehaven Ave., Bogie/Market Loop/Early Dawn, Orchard Ave. and California St.

The newly constructed divided roadway section from ***Prairie Ave. to Boekel Rd.*** would have four - 12 foot wide lanes, an 11 foot swale on both sides of the roadway, a 12 foot bicycle/pedestrian pathway on

the right side of the SH 41 roadway, with a 16 foot median restriction that will only allow left turns at principal roadways and the future selected ½ mile signal access locations (Harvest Ave. and Ok Corral). The section from Prairie Ave. to Boekel Rd. will be a divided highway. This segment is divided into two sections for construction; Prairie Ave. to Lancaster Ave. and Lancaster Ave. to Boekel Rd. Both sections are scheduled for construction in 2021.

Improvements to SH 41, *from* ***Boekel Rd. to SH 53*** would have three - 14 foot wide lanes (with a center two way left turn lane) exclusive left turn lanes at the intersections, 11 foot swales on both sides of the roadway, two foot curb and gutter, and a 12 foot bicycle/pedestrian pathway on both sides of the SH 41 roadway. No turn restrictions are planned at this time for this segment of the roadway. This section is not a divided highway. *This section is not included in the current upcoming construction scope and will be addressed by ITD, at a later date, sometime after 2021.*

Both approaches to Highway 41 on Lancaster (future 5-lane), Wyoming, Hope, Poleline (east-leg only), and 16th Avenue would be widened to three lanes from the Highway 41 intersection to the proposed north / south ½ mile access road. Both approaches to Highway 41 on Hayden Ave. (from the intersection for 1/4 mile), Prairie Ave., Poleline Ave. (west leg only), and Mullan Ave. would be widened to five lanes. These roadways would allow for designated left turns at Highway 41 and the secondary access road intersections.

Also mentioned previously, the improvements not considered by this plan, involves the improvement of Highway 41 and I-90 interchange (will include the section from Seltice Way to Mullan Avenue) as well as the section from Boekel Road to SH 53. These sections will be addressed at a later date by the Idaho Transportation Department. Further analysis of these sections will need to be addressed to see what improvements are warranted and what can be done to improve the safety, capacity and congestion in those areas. ITD will analyze the entire Interstate 90 route, including this interchange, between the Washington State Line to 15th Street in a forthcoming corridor study. Interchange improvement needs will be addressed as part of this future study.

Other improvements are planned within the corridor. A summary of proposed road improvements that are within or projects that touch the boundaries of the SH 41 Corridor Master Plan are contained in Table 31 & 32 below:

Table 31 - Planned Roadway Projects within the SH 41 Corridor

"DRAFT" Planned Roadway Projects within the SH 41 Corridor Plan 9-7-16

EXISTS IN YEAR	Roadway	From	To	DESCRIPTION OF ROADWAY PROJECTS 2020	Jurisdiction
2020	Prairie Ave	SH 41	Meyer Rd	Reconstruct to 5 Lanes	PFHD/Post Falls
2020	Boekel Rd	Cassia St	SH 41	New 3 lane segment	Rathdrum
2020	Meyer Rd	Boekel Rd	SH 53	Reconstruct to 3 lanes	Rathdrum
2020	Meyer Rd	Lancaster Rd	Boekel Rd	Reconstruct to 4 lanes	Rathdrum
2020	Boekel Rd	SH 41	Meyer Rd	Reconstruct to 3 lanes	Rathdrum
2020	Lancaster Rd	SH 41	Meyer Rd	Reconstruct to 2 lanes	Rathdrum
2020	Lancaster Rd	SH 41	Huetter Rd	Pavement Overlay	Rathdrum
2019	SH 41	Mullan Ave	Prairie Ave	Widen to 4 Lanes w/center turn lane at intersections, Right-of-way, multi-use path on east side of roadway and center median	ITD
2021	SH 41	Prairie Ave	Lancaster Rd	Widen to 4 Lanes w/center turn lane at intersections, Right-of-way, multi-use path on east side of roadway and center median	ITD
2021	SH 41	Lancaster Rd	Boekel Rd	Widen to 4 Lanes w/center turn lane at intersections, Right-of-way, multi-use path on east side of roadway and center median	ITD
EXISTS IN YEAR	Roadway	From	To	DESCRIPTION OF ROADWAY PROJECTS 2035	Jurisdiction
2035	SH 41	Wright St	Latah St	Add curb, gutter, landscape, swales and illumination	ITD/Rathdrum
2035	SH 41	McCartney St	Junction of SH 41/SH 53	Construct curb & gutter	ITD/Rathdrum
2035	Hayden Ave	Greensferry Rd	Meyer Rd	Reconstruct to 5 lanes	PFHD
2035	Hayden Ave	McGuire Rd	Greensferry Rd	Reconstruct to 5 Lanes	PFHD
2035	Hayden Ave	Meyer Rd	Huetter Rd	Reconstruct to 5 Lanes	PFHD
2035	Wyoming Ave	Idaho Rd	Huetter Rd	Designate as a rural collector and construct to 3 lanes	PFHD
2035	Meyer Rd	Poleline Ave	Lancaster Ave	Reconstruct to 3 Lanes	PFHD
2035	Prairie Ave	McGuire Rd	SH 41	Reconstruct to 5 Lanes	PFHD/Post Falls
2035	Greensferry Rd	3rd Ave	Seltice Way	Reconstruct to 5 Lanes	Post Falls
2035	Greensferry Rd	Mullan Ave	16th Ave	Reconstruct to 5 Lanes	Post Falls
2035	E 1/4 Mile Rd	16th Ave	Prairie Ave	Local Street	Post Falls
2035	Charleville Rd	12th Ave	Prairie Ave	Local Street	Post Falls
2035	12th Ave	1/2 Mile Rd W/O SH 41	E 1/4 Mile Road	** Urban Collector	Post Falls
2035	Greensferry Rd	16th Ave	Prairie Ave	Reconstruct to 5 Lanes	Post Falls
2035	Mullan Ave	Idaho Rd	Greensferry Rd	Reconstruct to 5 Lanes	Post Falls
2035	Lancaster Rd	Greensferry Rd	SH 41	Reconstruct to 2 Lanes	Rathdrum
2035	Meyer Rd	Lancaster Rd	1900 ft north of I/S	Pave existing gravel 2 Lanes	Rathdrum
2035	Lancaster Rd	Greensferry Rd	SH 41	Add Two Way Left Turn Lane/Center Median	Rathdrum
2035	Lancaster Ave	SH 41	Meyer Rd	Reconstruct to 5 Lanes	Rathdrum
2035	Nagel Rd	Greensferry Rd	Rio Grande Ave	Construct new 2 Lane Segment, 2600 lf	Rathdrum
2035	Boekel Rd	Meyer Rd	Huetter Rd	Reconstruct to 3 lanes	Rathdrum
2035	Greensferry Rd	Lancaster Rd	Wyoming Ave	Reconstruct to 3 Lanes	Rathdrum
2035	SH 41	McCartney St	Junction SH 53	Construct curb & gutter	ITD/Rathdrum
2035	SH 41	Boekel Rd	SH 41/53 Junction	Reconstruct, Undivided highway, Multi-Use Path on both sides	ITD

Table 32 – Additional Planned Projects through 2035

EXISTS IN YEAR	Roadway	From	To	DESCRIPTION OF INTERSECTION PROJECTS 2035	Jurisdiction
2035	Greensferry Rd	Hayden Ave	At intersection	Signal	PFHD
2035	Meyer Rd	Hayden Ave	At intersection	Signal	PFHD
2035	Greensferry Rd	Prairie Ave	At intersection	Signal	PFHD/Post Falls
2035	Greensferry Rd	16th Ave	At intersection	Signal	Post Falls
2035	Greensferry Rd	Lancaster Ave	At intersection	Add left & right turn lanes - all approaches	Rathdrum
2035	SH 41	Neufield/Covington	At intersection	Restrict to Right-in/Right-out	ITD
2035	SH 41	Nagel Rd	At intersection	Signal	ITD/Rathdrum
2035	SH 41	California St	At intersection	Restrict to Right-in/Right-out	ITD
2035	SH 53	Meyer Rd	At intersection	Signal	CoR/LHD
2035	SH 41	Coeur d'Alene & Pine Sts.	At intersection	Add left turn lanes on SH 41, Correct skew angle at Coeur d'Alene St.	ITD/Rathdrum
2035	SH 41	Washington & Steven Sts.	At intersection	Add left turn lanes on SH 41	ITD/Rathdrum
EXISTS IN YEAR	**Roadway**	**From**	**To**	**DESCRIPTION OF DEVELOPER DRIVEN PROJECTS 2020**	**Jurisdiction**
2020	Ratcliff St	Lancaster Ave	Nagel Ln	** Add Rural Major Collector	Rathdrum
2020	12th Ave	Idaho Rd	1/2 mile Rd W/O SH 41	New 3 lane roadway	Post Falls
2020	16th Ave	Idaho Rd	1/2 mile Rd E/O SH 42	Reconstruct to 3 lanes	Post Falls
2020	Bluegrass Ln	Idaho Rd	E 1/4 Mile Road	** Urban Collector	Post Falls
2020	1/2 mile Rd E/O SH 41	16th Ave	Prairie Ave	Local Street	Post Falls
2020	Poleline Ave	Greensferry Rd	Huetter Bypass	Rebuild to 5 lanes	Post Falls
EXISTS IN YEAR	**Roadway**	**From**	**To**	**DESCRIPTION OF DEVELOPER DRIVEN PROJECTS 2035**	**Jurisdiction**
2035	Beachwood St	Tudor St	Pineview St	Add Rural Minor Collector	Rathdrum
2035	Sedona St	Flagstaff St	Pineview St	Add Rural Minor Collector	Rathdrum
2035	California St	Greensferry Rd	Cascade St	Add Rural Minor Collector	Rathdrum
2035	Majestic Ave	Ratcliff St	Trails End Rd	Add Rural Minor Collector	Rathdrum
2035	Rio Grande	Wyoming Ave	Nagel Ln	Add Rural Major Collector	Rathdrum
2035	E 1/2 mile Rd	Prairie Ave	Lancaster Ave	Add Rural Major Collector	Rathdrum
2035	Nagel Ln	Thayer St	Huetter Rd	Add Rural Major Collector	Rathdrum
2035	Tombstone St	Meyer Rd	Ramsey Rd	Add Rural Major Collector	Rathdrum
2035	Ok Corral Rd	Idaho Rd	Rio Grande Ave	Add Rural Major Collector	Rathdrum
2035	Ok Corral Rd	Rio Grande Ave	Huetter Rd	Add Rural Major Collector	Rathdrum
2035	Ratcliff St	Nagel Ln	Boekel Rd	Add Rural Major Collector	Rathdrum
2035	Lancaster Ave	1/4 mile W of Greensferry Rd	Greensferry Rd	** Upgrade to Rural Major Collector	Rathdrum
2035	Lancaster Ave	Burlington Rd	1/4 mile W of Greensferry Rd	**Add Rural Major Collector	Rathdrum
2035	E 1/4 mile Rd	Prairie Ave	Wyoming Ave	Local Street	PFHD
2035	W 1/4 mile Rd	Prairie Ave	Wyoming Ave	Local Street	PFHD
2035	W 1/2 mile Rd	Prairie Ave	Nagel Ln	Local Street	PFHD
2035	W 1/2 mile Rd	Nagel Ln	California St	Local Street	PFHD

** Add Collectors = changes roadway designation only (Federal Classification of roadway)

CHAPTER 5 - TRANSPORTATION & DEVELOPMENT

Introduction

People and places are connected to one another by transportation systems. The safe movement of people, property, and products is closely related with the economy and established land use patterns of a region. Close coordination between land use and transportation planning must be maintained if an area is to develop in an orderly fashion. The Highway 41 Corridor Master Plan provides transportation and land use management goals and policies as tools for guiding and assuring continued growth and development within the corridor planning area, while maintaining minimal disruption and enhancement of traffic flow along the highway. If the goals and policies of the plan are to be realized during the 20- year planning period, the development of a meaningful implementation program is essential. Implementation of the Highway 41 Corridor Master Plan will require specific regulations and more detailed planning to shape the strategy of the plan into reality. Coordination and cooperation among the jurisdictions and agencies is critical for the successful implementation of the plan.

Land Use/Economic Development

Proximity to major transportation corridors, such as Highway 41 enhances the Prairie's economic development potential. Employers are attracted to areas that are well served by highways. However, there is a heavy reliance of the state highway system to serve local needs and a need for transportation planning specific to the Rathdrum Prairie coordinated with local governments. This Plan is the cornerstone of that effort and adoption of the coordinated plan is the first step in regional coordination. Implementation of coordinated project review, prior to development, will serve to meet the interests of the Plan.

Zoning and Land Use Regulations

In general, the area Zoning Codes do not tie back to the respective Comprehensive Plans as much as they should. Standards for regulation of aesthetics and urban design are lacking but are very much needed. Adoption of the Plan and associated implementation controls will serve to guide Prairie development.

The Plan encourages mixed uses within zones with appropriate buffering between land uses, clustering of development to maximize open space, and requires access management within the corridor.

Transportation Plan

Highway 41 is considered a major transportation corridor. The Plan recognizes access restrictions along Highway 41 as a tool to reduce congestion along the corridor. Unrestricted intersection movements are allowed only at major intersections at one-mile intervals or designated intersections. "Backage" roads or secondary access roads provide local circulation to properties fronting on Highway 41 and provide off corridor circulation. Direct access from parcels to the state highway is not encouraged or anticipated.

Management of area development should include the use of shared parking areas with internal circulation for short trips within a shopping area. The use of Crossover easements is a managed access option that provides local circulation through joined or common parking lots. Existing businesses can adapt to this concept as development infill or congestion and traffic operations warrant. Further, placement of buildings along the corridor will be such that parking areas will not be "bordering" the roadways with large setbacks from pedestrian facilities. A Human Scale within the corridor that encourages alternative mode choices, provides excellent visibility from vehicular traffic, and is mixed with open space and landscaped areas will provide an alternative to current development patterns.

Traffic Signals

Traffic signals are currently located on Highway 41 at Seltice Way, the westbound I-90 ramp, Mullan, 16th, Poleline, Prairie, Hayden, Boekel, Avenues and the SH 41/53 junction. Traffic signals are proposed at 12th St, Hope/Bluegrass, Harvest, Wyoming, and Lancaster Avenues. The signals would allow for protected or exclusive left turns, which mean that designated left turn lanes would be provided/constructed on all intersection approaches. Designated right turn lanes would be provided at arterial intersections. Provision of traffic signals will enhance left turn movements from intersecting streets.

Road Widening Projects

Both approaches to Highway 41 on Lancaster, Wyoming, Hope/Bluegrass, Poleline (east-leg only), and 16th Avenue would be widened to three lanes from the Highway 41 intersection to the proposed north/ south ½-mile access road. Both approaches to Highway 41 on Hayden Ave. (from the intersection for ¼ mile), Prairie Ave., Poleline Ave. (west leg only), and Mullan Ave. would be widened to five lanes. These roadways would allow for designated left turns at Highway 41 and the secondary access road intersections. The north-south roads; Greensferry Road will be improved to five lanes from 3Rd. to Prairie Ave. (2035) and will be improved to three lanes from Wyoming to Lancaster Ave. (2035). Meyer Road would be improved to three lanes from Poleline Ave. to Lancaster Road (2035), improved to four lanes from Lancaster to Boekel Roads (2020) and improved to three lanes from Boekel Road to SH 53 (2020). All road improvements along SH 41 would include eleven foot swales for stormwater runoff and a 12-foot paved bicycle/pedestrian pathway on one or both sides of the roadways (depending on the roadway section). A 16-foot landscaped median strip as well (between Mullan Ave. to Boekel Road), would be provided on all north/south and east/west roadways for 300 feet from the intersecting major arterials.

Secondary "Backage"/Access Roads

A network of secondary access roads is proposed with the plan to provide access to future development projects. "Backage" roads would be located approximately 1/4 mile from the east and west of Highway 41 and will run parallel to the highway. The ¼ mile and ½ mile backage roads are currently designated as “local streets”. The designation of the classification of the backage roads could be changed to collector roads in the future. The travel demand forecast model scenarios during this plan update showed lower projected roadway volumes, if higher volumes are predicted closer to the construction of the backage roads, a collector designation may be desirable and would be decided upon by the jurisdictional authority.

The ¼ mile backage road would extend from 12th Ave. on the east side of the highway north to Rathdrum and on the west side of the highway from 12th Ave. within the City of Post Falls past Lancaster Ave. into the City of Rathdrum.

The quarter-mile roads will serve as local access to properties fronting on Highway 41 and will provide access to intersecting arterials for access to Highway 41 for left turn movements. The half-mile road would run from Horsehaven /20th Ave. on the east side of the highway and from Mullan Ave. on the west side to Rathdrum. The east/west access roads will connect the "Backage" roads with Highway 41 and will be located approximately every 1/4 mile between Poleline and Lancaster Ave. The backage roads will not allow private drives for direct access along the backage road corridors. Access will however be designated away from the main backage roads.

Access to Highway 41 will also be restricted, and is discussed in detail in the next section. Connectivity of the proposed roadways will be limited in the vicinity of the railroad tracks to limit uncontrolled crossings of the rail lines. Future realignment or abandonment of the rail would allow for the completion of the roadways for cross-prairie access. Secondary “Backage” Roads are intended to provide off corridor north/south circulation and access to properties fronting on Highway 41.

A system of "Backage" road will be constructed with the development of the corridor. These roads will primarily access arterials that intersect with Highway 41, with east / west access roads provided approximately every 1/4 mile between major intersecting roadways.

The "Backage" and access roads will be constructed with a minimum of two 12-foot travel lanes and a 12-16 feet center median, with an 80 to 100-foot ROW. The right-of-way will also support drainage swales,

utilities, and a 10-foot pedestrian / bikeway path on both sides of the highway, with the east side path constructed by ITD and a future west side path constructed and maintained by others as demand warrants. The pedestrian path should be located at a sufficient distance from the roadway so that future widening of the road will not affect perpendicular alignments. Backage road design is subject to City design standards and subject to change based on actual development and travel demands.

It should be noted here that construction of these roads will primarily be motivated and funded by development. Development will be responsible for improvements that require the construction of adjacent "Backage"/access roads.

If a "Backage"/access road or access connection to a major roadway is not provided at a desired site, then the development will have to be responsible for these improvements or select a location with adequate infrastructure, at which point they may be required to contribute to pre-existing development agreements. Aesthetic Corridor Overlay- Standards apply within one-quarter mile on each side of Highway 41 for signage, landscaping, site design, and the provision of open space.

Private Drives

Private drives are proposed in those areas that do not have access to “Backage” roads. Some areas have been specifically identified for private drives, while other areas may emerge as development occurs. Private drives are proposed on the east side of the highway to access 12th and Mullan Ave. South of Mullan Ave., a private drive exists as a continuation of Neufeld Lane that provides access to the highway and left turn capabilities via Mullan Ave.

Private Drives are intended to provide access to properties in those areas not served by “Backage” roads along SH 41. Private drives will not be allowed along the backage roads corridors for direct access to the local street, but alternative connecting access will be allowed. This will ensure traffic flow, increase safety and help to reduce conflicts. It will be dependent upon future design of the backage roads when funding becomes available.

Pedestrian and Bicycle Improvements

Within the proposed transportation improvements, shared pedestrian / bicycle facilities are recommended for development with each new or reconstructed roadway. Currently, designated facilities are not provided on most roadways; however, are casually used as a portion of the shoulder or within an undeveloped area of the right of way. Funding non-motorized projects can be a challenge with the shortage of transportation funding these days. The jurisdictions do a good job in the planning and watching for funding opportunities that become available to fund these projects. Other options could be considered in the future to help fund these improvements.

The City of Post Falls recently built the pedestrian/bicycle trail along SH 41 from Seltice Way to just south of Covington Ave. on the right side of the highway. The trail is 8.5 ft wide and has 2 ft shoulders where applicable. The project included a pedestrian LED signal at the intersection of Seltice Way & SH 41/Ross Point Rd. This project enhances the non-motorized network and provides additional safety benefits. The construction was completed in 2016. The following Figure on the following page depicts the cover sheet of the plan for the trail.

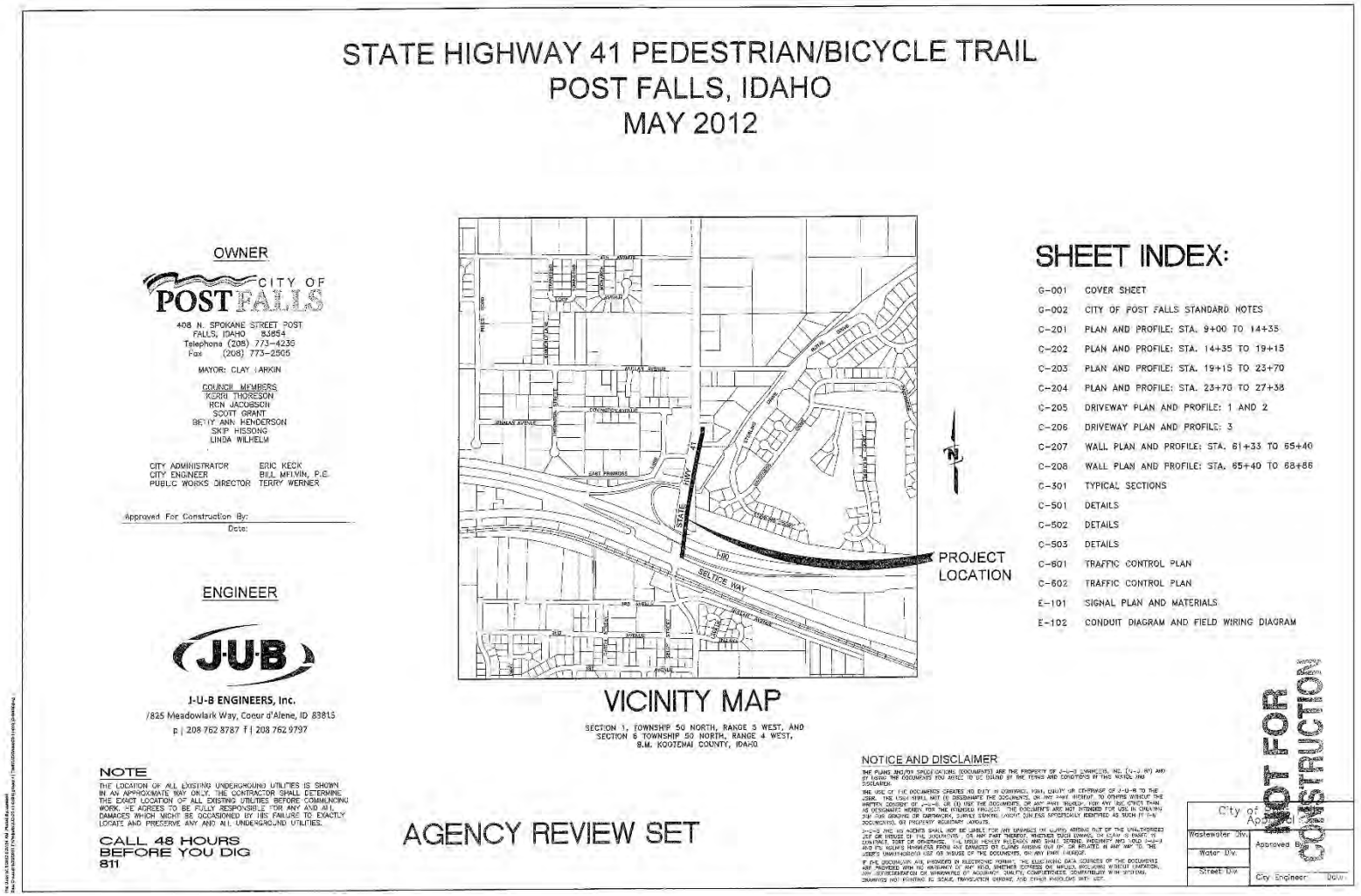
The City of Post Falls has requested that non-motorized pathways be constructed on both sides of SH 41, this conversation will continue through the design phase of the projects along SH 41. The City of Post Falls believes removal of a west side trail option is counter intuitive to the progress of multi-model plans that KMPO already has in place. This plan recommends right of way should be preserved for a west side option that would be constructed and maintained by others. The east side pathway is included in the ITD projects contained in the 2017-2021 Transportation Improvement Program.

In addition, the City of Post Falls and a number of county residents are desirous of a potential grade separated non-motorized crossing of SH 41, near Prairie Ave. The request could facilitate identified local priorities for expansion of the trail and path network safer access to/from the SH 41 corridor. These discussions will need to continue into the future.

ITD, the City of Post Falls and the Post Falls Highway District will be working with the Union Pacific Railroad (UPRR) towards the removal of the existing spur that crosses SH 41, just north of Prairie Avenue. Union

Pacific has no plans at this time to vacate the rail line west of SH 41, which is currently used as a switch track serving the Hauser Industrial area. Additional analysis outside of this plan will be required to determine the demand and benefit cost of constructing a grade separated bike and pedestrian facility over SH 41.

Figure 48 - City of Post Falls - Pedestrian/Bicycle Trail Plan, May 2012



Development Standards

East/West Access Roads (North of Poleline Ave.) - Minor Collector access to Highway 41 is to provide at quarter mile increments. Access to the Highway is limited to right in/right out turning movements. Local road right of way is proposed at two 13' travel lanes, a 14' center turn lane, grass drainage swales, utility corridors, and pedestrian/bicycle path as a local access road with 40'-44' of developed roadway (minimum right-of-way width 80-100 feet).

North/South Access Roads (North of 12 th Ave.). Access roads are provided at one quarter mile and one half mile from the corridor as a local street roadway. Collector improvements include a landscaped median strip for 300' from intersecting arterials and pedestrian/bicycle pathway (total right-of-way width 80-100 feet).

Rail Crossing Zones- Access roads terminate at the rail crossings until rail use is abandoned. Rail right of way should be preserved for future transportation uses, such as Rails to Trails or future transportation options. Existing Rail Crossings on Greensferry and Meyer roads will remain until use is abandoned.

Highway Access and Control (South of Poleline Ave.) - in conformance with the adopted Memorandum of Understanding between the City of Post Falls and the Idaho Transportation Department (total right of way width 130 feet). North of Poleline Ave. is proposed as a four travel divided highway with left turning movements at major intersections only. Right of Way width north of Poleline is proposed at 150-200 feet with a possible future R/W reservation of 300'.

Major intersecting roadways- Are proposed as 3 lanes at the intersection with left turning movements (Lancaster- future 5-lanes, Wyoming, Hope, Poleline-east of Highway 41, and 16th Ave.) and 5 lane roadways at the intersection with left turning movements (Prairie, Hayden, Poleline- west of Highway 41 and Mullan Ave.). All other minor intersecting roadways are proposed as two lanes without left turning movements. Greensferry and Meyer Roads proposed at 3 lanes with left turning movements at intersecting roads. Future Traffic Signals are planned and intended to be placed as development and traffic warrants.

Road Widening Development Driven Projects

Widening improvements are also proposed for roadways (Table 2) that intersect with Highway 41 within the study area. Both approaches to Highway 41 on Lancaster (possible future 5-lane), Wyoming, Hope, Poleline (east-leg only), and 16th Ave. would be widened to three lanes from the Highway 41 intersection to the proposed north/ south ½-mile access road. Both approaches to Highway 41 on Hayden Ave. (from the intersection for ¼ mile), Prairie Ave., Poleline Ave. (west leg only), and Mullan Ave. would be widened to five lanes. These roadways would allow for designated left turns at Highway 41 and the secondary access road intersections. All other east/west roadways are proposed to have only two lanes without designated left turn movements. Both Greensferry and Meyer Roads would be improved to three lanes.

It should be noted that construction of these roads will be primarily motivated and funded by development. Development will be responsible for frontage improvements that require the construction of adjacent "Backage"/access roads. If a "Backage"/access road or access connection to a major roadway is not provided at a desired site, then the development will have to be responsible for these improvements or select a location with adequate infrastructure, at which point they may be required to contribute to pre-existing development agreements.

ITD has explained that the proposed cross section of the SH 41 corridor indicates curb and gutter in the urbanized areas as well as a shared use path. Curb and gutter design is to control drainage and reduce erosion, however should be cautiously utilized on higher speed facilities. Furthermore, with the proposed backage roads and limited access, except at major intersections; the utilization of curb and gutter should be minimized except at intersections to control drainage as well as accommodate pedestrians.

It is the intent of ITD to provide illumination at signalized intersections with ADA facilities. The 11 foot separation between the travel lane and shared use path meets standards for the roadway speeds.

The proposed cross section indicates curb and gutter design to control drainage and reduce erosion, however should be cautiously utilized on higher speed facilities. Furthermore, with the proposed frontage roads and limited access, except at signalized intersections; the utilization of curb and gutter should be minimized except at intersection to control drainage as well as to accommodate pedestrians. It is the intent to provide illumination at signalized intersections with ADA facilities. The 11 foot separation between travel lane and shared use path meets standards for roadway speeds.

Figure 49 - SH 41 Proposed Typical Street Intersection Plan

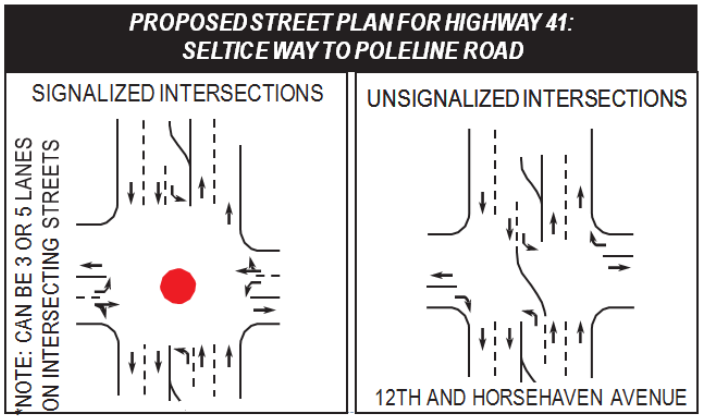
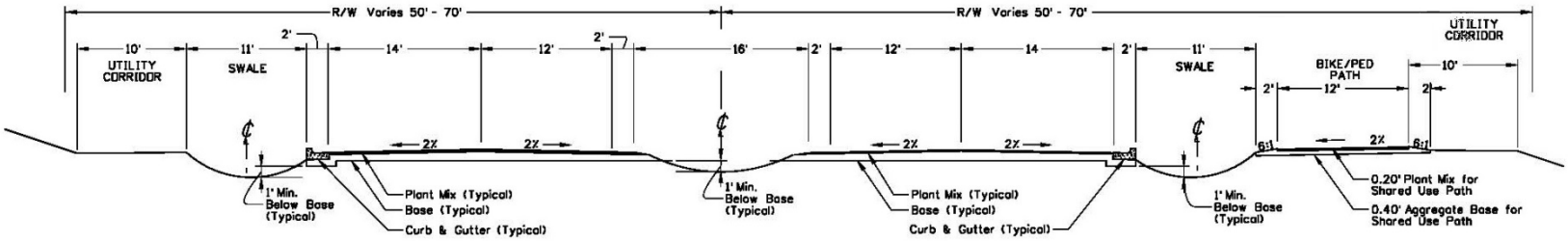
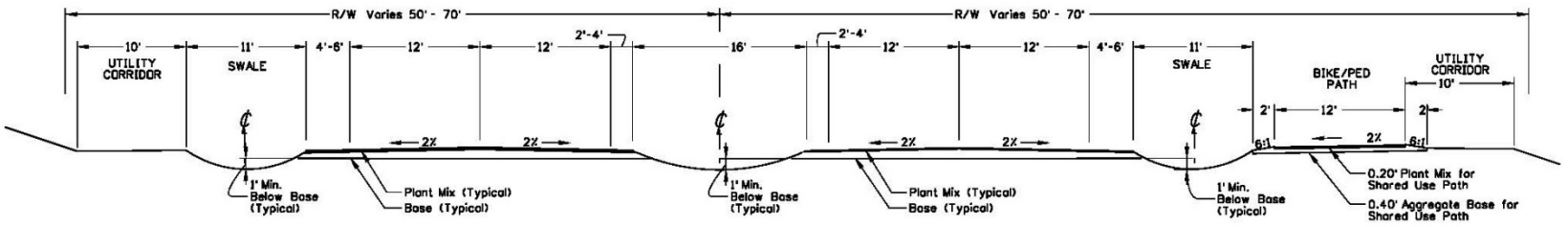


Figure 50 - SH 41 - Typical Roadway Sections



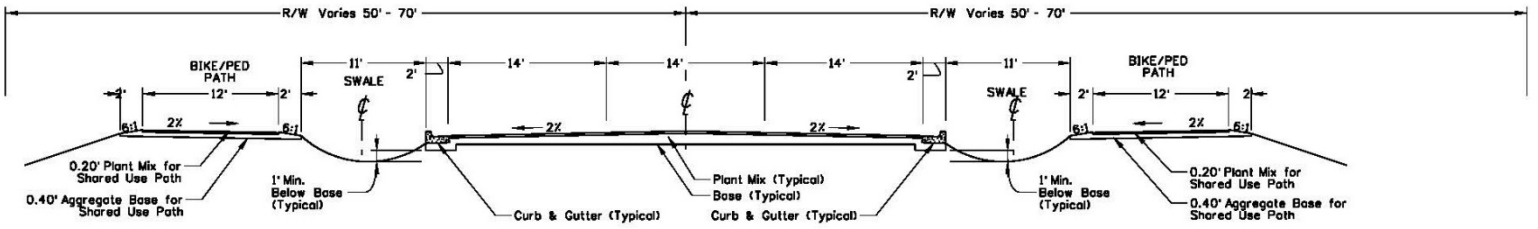
SH-41, MULLAN AVE. TO PRAIRIE AVE.
MP 0.170 TO MP 2.449
TYPICAL URBAN SECTION

Figure 51 - SH 41 - Typical Roadway Sections (Continued)



SH-41, PRAIRIE AVE. TO BOEKEL RD
MP 2.449 - MP 6.46
TYPICAL RURAL SECTION

Figure 52 - SH 41 - Typical Roadway Sections (Continued)



SH-41, BOEKEL RD TO SH-53
MP 6.46 - MP 7.50
TYPICAL URBAN SECTION

Transportation System/ Demand Management

Traffic operations can be improved and sometimes capacity can be recovered through Transportation System Management (TSM) strategies. TSM strategies are intended to increase system efficiencies and/ or reduce vehicle traffic through intelligent engineering and planning rather than constructing/ providing physical capacity improvements (road construction, road widening, etc.). Typical examples of TSM include:

- Traffic signal timing coordination
- Access management
- Incident management programs (video monitoring, quick emergency responses, etc.)

As determined within the Plan, physical roadway improvements (road widening and signals) would be most relevant for Highway 41 given the projected increase in traffic by year 2035. Signal coordination and access management TSM strategies were incorporated, since these measures promote the mobility goals of lTD and are consistent with the capacity improvements proposed for Highway 41.

lTD is implements incident management programs for some State roadways. The timing for these measures in District 1 is currently not known and was not included into the analysis. Similarly, public transportation measures were not reflected in the analysis, as it will depend upon future land use densities and the willingness of local agencies to operate and maintain transit within the area.

Commute trip reduction / management strategies, known as Transportation Demand Management, can encourage vehicle trip reduction through utilization of high-occupancy vehicles (transit, vanpool), staggered work hours, ride-sharing, or other TDM strategies.

Commute trip reduction TDM measures would be appropriate for future implementation within the Highway 41 corridor given the commercial and retail business emphasis of the land use plan. These measures are typically voluntary and rely upon the willingness of future land owners/ tenants/ employers to coordinate with appropriate management strategies. Given their future implementation, the measures were not included in the plan because they do not represent concrete TDM strategies at this juncture; although they would likely be beneficial to the corridor overall as land use densities are achieved.

CHAPTER 6 - ENVIRONMENTAL REVIEW

Study Area

The study area for the Highway 41 Corridor Plan is located in central Kootenai County, Idaho, and includes land located one mile on either side of Highway 41, extending north from I-90 in Post Falls to the SH 41/SH 53 junction in the City of Rathdrum.

Highway 41 provides the only direct improved transportation route connecting Post Falls and Rathdrum, which are two of the fastest growing cities in the state of Idaho. Because of the region's rapid population and employment growth, the area has witnessed increased traffic volumes and development pressures along Highway 41. Current trends in development emphasize a continuing concentration of auto-oriented land use along the corridor, as well as at the Interstate 90 interchange and within the City of Post Falls. This pattern has resulted in concern about adequate traffic flow, street connectivity, pedestrian/bicycle circulation, and access to Highway 41 from commercial sites. The need to maintain and enhance transportation capacity north-to-south and east-to-west throughout the study area is crucial.

The purpose of this environmental review is to conduct an inventory of land use, public utilities, hydrology, geology, cultural and historical features, and other factors to identify key elements that are critical to transportation planning in the study area. This document summarizes the most critical environmental planning factors that could affect the analysis and development of improvement options for the corridor including land use, and the natural and physical environment. The environmental review is organized into three major study elements: the built environment, the natural environment, and critical land use and environmental factors.

Built Environment ~ Existing Land Use and Zoning

Official zoning maps, together with aerial photographs and a ·windshield survey were used to determine existing land use. Zoning in the study area varies greatly, ranging from rural - agricultural (which accounts for the majority of the northern two-thirds of the study area) to areas planned for higher-density residential and commercial development (primarily within Post Falls' and Rathdrum' city limits).

Various retail, service, and industrial facilities concentrated along Highway 41 just north of Interstate 90 can be characterized as Urban High and Urban Medium and commercial development along the corridor, Urban density residential development extends outward, both east and west, from commercial areas that border Highway 41. The recent annexation of the City of Post Falls will further intensify these types of land uses. Major east-west roads connecting ·with the Highway include Mullan Rd. and 16th, Poleline, Prairie, Hope/Bluegrass, Hayden Ave., Wyoming, Ok Corral, Lancaster Avenues, Nagel Lane and Boekel Rd. These intersections already are or will be controlled with traffic signals in the future anticipated by 2035. Limited commercial/industrial development is within the corridor including convenience stores, mini-storage, hardware and lumber stores, small businesses, churches, and a nursery/greenhouse. Little commercial and industrial land use exists off the corridor. West of Highway 41 on Mullan Ave., development of a Walmart has impacted traffic at the Highway 41/ Mullan Ave. intersection. Location of large retail establishments generally act as catalysts for future commercial developments in the vicinity.

Land located along Highway 41 may be considered prime commercial property. Most commercial development has occurred primarily between Mullan and Poleline Ave. Some of the existing commercial land use area non-compliant with Kootenai County land use regulations. Very little commercial activity has occurred north of Prairie Ave. due to policies, which prohibit the extension of public wastewater treatment service into unincorporated areas of Kootenai County.

Most agriculturally zoned land is used for farming and production of small grain and grass seed. Large acreage residential development and vacant land also exist in the study area, a majority of which is planned for residential development at much higher densities.

Within Kootenai County, subdivision of land that is zoned agriculturally is prohibited. However, there are numerous existing parcels located on the Prairie that are less than five acres in size that do not have urban services. Presumably, these parcel s were created prior to 1978, when the Panhandle Health District ad opted regulations requiring individual parcels located over the aquifer (if served by an on-site septic system) to be no less than five acres in size. The size limitation acts to disperse the number of septic systems and seeks to protect the Rathdrum Prairie/Spokane Valley Aquifer.

Based on planned land use patterns and current development trends that have concentrated future commercial uses in the southern third of the stud y a rea, it is expected that a rea residents will continue to rely heavily on vehicular use to access area services. Kootenai County's population is projected to nearly double during the next 20 years. Continued residential development in this area will result in greater reliance on conveniently located shopping and services.

Major Utilities

Avista Utilities and the Kootenai Electric Cooperative provide electricity via several overhead distribution lines within the stud y a rea. Avista also supplies natural gas to the area. Crossing the northwest corner of the stud y a rea are two power transmission easements owned by Bonneville Power Administration (BPA) and Avis ta Utilities, respectively. A third easement is for Pacific Gas and Transmission/Northwest pipeline is adjacent to the power easements. Yellowstone Pipeline also has a gas line easement in the vicinity of Poleline Ave.

Water service within the study a rea is provided by the Cities of Rathdrum and Post Falls, Ross Point \Water District, and several other special service districts within Kootenai County. Many properties are served by individual private systems (wells). The primary source of water is the Rathdrum Prairie-Spokane Valley Aquifer.

Within the City of Post Falls, a water main is located within Highway 41. Water mains are also located within arterials and local access streets that branch off from the highway. A majority of Post Falls in the corridor study area and respective Area of City Impact is served by Ross Point Water District, which serves development located north of Mullan Ave.

In Rathdrum, a water main within the high way extends as far south as the Highway 41/ Nagel Road intersection, where the main rums west along Nagel Road to serve residential development located north, south, and adjacent to the right-of-way.

Public wastewater treatment service is limited within the study area due to the limitation of extending public systems to unincorporated areas of the county. Within the City of Post Falls, service is available along the Mullan Ave. corridor, both east and west of Highway 41. The City is currently forming a Local Improvement district (LID) to extend wastewater treatment facilities, north along Highway 41 from Mullan Ave. to beyond Poleline Ave. Rathdrum's public system is not within that portion of Highway 41 located in the study area. However, mains are located in local access streets that serve existing residential development to the west of

Highway 41 and within the study area. Currently, wastewater treatment for both Post Falls and Rathdrum is handled through the Post Falls treatment plant.

Century Link is the primary telecommunications provider in the corridor.

Rail Transportation

Two Union Pacific railroad lines traverse the corridor near the midpoint of the study area. Both of these rail line highway intersections are gate controlled. Current efforts are under consideration to potentially realign, some Union Pacific rail operations on the Rathdrum Prairie. Discussions locally have included conversion of the spur line track crossing both SH 41 and Prairies Avenue to extend the Prairie Trail or serve as a future transportation corridor. Railroads on the Rathdrum Prairie may have historic significance under Section 106 of the National Historic Preservation Act. If determined eligible for the National Register of Historic Places, the railroad right of way could potentially designated an historic resource and therefore a 4(£) property under NEPA.

Section 4(£) resources consist of publicly owned public parks, recreation areas, or wildlife and waterfowl refuges or significant historic sites or resources. Under the regulations, an analysis is required of properties and FHWA cannot approve a project that uses land from a Section 4(£) resource, unless it determines that there is no feasible and prudent alternative to the use of the resource and that all possible planning to minimize harm has been addressed.

Historic resources are protected unless incorporated into a transportation project which does not change its' Section 4(£) designation. The regulations do not apply to restoration, rehabilitation, or maintenance of historic transportation facilities, if the proposed work will not adversely affect the historic qualities. The State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) must agree with a determination of "no adverse effect".

Natural Environment

Water Resources

There are no surface water bodies within the corridor study area. The Rathdrum Prairie/ Spokane Valley Aquifer is the only water resource examined in this report.

Groundwater

Protection of the Rathdrum Prairie /Spokane Valley Aquifer, the region's sole source domestic water supply, is one of the most critical planning factors for the study area. The Rathdrum Prairie/Spokane Valley Aquifer underlies the entire study area. The aquifer was formed during the last ice age more than 12,000 years ago and is composed of sand, gravel, cobble, and other glacial outwash. The aquifer begins in Idaho between Spirit Lake and the south end of Pend Oreille Lake and flows south until it reaches the middle of the Rathdrum Prairie, where it turns west and flows into Washington State under the Spokane Valley. The aquifer turns and flows north, from Spokane's Central Business District, eventually discharging into the Spokane and Little Spokane Rivers.

Velocities of the groundwater within the aquifer ranges anywhere from 1 to 50 feet per day with a westward flow from Idaho to Washington. The depth of the water table varies between 100 and 400 feet below grade in Idaho. The volume of the aquifer is about 10trillion gallons, making it one of the most productive aquifers in the United States. Because of the aquifer's high permeability and groundwater velocity, it is extremely

susceptible to contamination. Contaminant levels in the aquifer increase as the water flows westerly. Generally, contaminant levels show a direct relationship to human activity and have increased since 1977, when water quality of the aquifer was first tested. However, in most levels the contaminants are still below the standards. Primary contaminates found in the aquifer are inorganic chemicals generated by everyday activities; nitrates, chlorides, sulfates, and other chemicals associated with human activity readily mix with the groundwater. Additional contaminates such as industrial chemicals from poor past disposal practices and landfill leachate can be found in the aquifer. These pollutant sources continue to degrade water quality within the aquifer as most substances simply wash through the sand and gravel directly into the aquifer. Even though some contamination has reached the aquifer, the water quality remains very good.

Aquifer Management

In 1978, the Rathdrum Prairie-Spokane Valley Aquifer was declared a "sole source" drinking water supply pursuant to Section 1424(e) of the Federal Safe Drinking Act (O.L. 93-523). This designation requires all federally assisted projects to use aquifer protection measures.
In addition, it proclaims the significance of this groundwater resource to the region and support for local protection efforts. In 1980, the Rathdrum Prairie / Spokane Valley Aquifer was designated a Special Resource Water in the Idaho Water Quality Standards and Wastewater Treatment Requirements. This resulted in increased protection for this resource.

Another measure of aquifer management is the Panhandle Health District regulation requiring properties located over the aquifer to be no less than five acres in size if they are to be served by an on-site septic system. Parcels less than five acres are not allowed to utilize on-site septic systems.

Hazardous and Waste Materials Considerations

The location of the aquifer directly below the study area should be a primary concern when establishing land use and transportation plans. The aquifer is not an indefinite resource and protection of the groundwater resource will help maintain a useable supply of water. According to a report published by the Department of Environmental Quality in 1991, potential sources for groundwater contamination are activities that use agricultural chemicals, petroleum handling and storage, landfills, hazardous materials and transportation/spills, and subsurface wastewater disposal systems such as septic tanks and drainfields. Prevention of water quality degradation through careful planning and consultation with water quality officials is a top priority for Kootenai County and the entire study area.

Topography and Geological Hazards

The terrain within the study area is relatively flat, gently declining in slope from north to south, and supports all types of development including residential, commercial, and industrial uses. Soils in this area are adequate for sustaining development and disposing of stormwater / wastewater. They are also found to be a useful building material. However, the extreme permeability of the soils and the presence of the aquifer greatly diminish the opportunity for effective subsurface wastewater treatment on-site.

- Prime Agricultural Farmland: If irrigated, the Natural Resource Conservation Service classifies the majority of the study area as prime farmland. The prime farmland soils in this area are Avonville fine gravelly silt loam and Garrison gravelly silt loam.

- Frost Action: The soils on the Prairie demonstrate unique hydrological characteristics. Due to high permeability and large pore spaces, the material does not allow for capillary action in the soil and is generally not vulnerable to frost action or heave.

- Stormwater Disposal: Disposal of stormwater through dry wells and bifurcation swales is acceptable due to the permeability of the soils.

- Wastewater Disposal: The level of treatment of wastewater is not as high as in other soils types. The nitrates in the effluent are unaffected and are passed to the groundwater table quickly with little treatment.

- Building Foundations: The soils are high in strength with low potential for differential settlement. Foundations can be constructed on existing material without extensive site preparation. The bearing capacity is generally very high.

- Road Building Materials: Road construction in the general vicinity takes place using existing soils or ballast material, and then topped with a course of crushed aggregate prior to application of a hard asphalt, or asphalt concrete surface.

Climate

The region is identified as having four seasons with typified weather patterns. During winter months, snow pack can range from several inches to several feet on the Prairie. The flat terrain of the study area and surrounding land is characterized by mild to intense winds. It is common for blowing snow to create drifts and blizzard road like conditions along Highway 41, severely impeding vehicular and pedestrian safety.

Air Quality

Air quality within the Rathdrum is regulated through the U.S. Environmental Protection Agency and the Idaho Department of Environmental Quality. Kootenai County is currently an unclassified area under the National Ambient Air Quality Standards for pollutants such as carbon dioxide, particulate matter (PM1 o), sulfur dioxide, nitrogen dioxide, lead, and ozone. With the projected increase in population and employment within the study area, and the resultant traffic increases, particular concern should be given to traffic flow improvements and point emission controls as it relates to businesses to mitigate further degradation of regional air quality. Particulate matter as it relates to agricultural practices should lessen as development occurs on the Prairie. Ultimately, the development would produce a shift in carbon monoxide from increased traffic and may increase concerns as it relates to potential new business in the area.

Critical Land Use and Environmental Factors

The following critical factors will play a significant role in the development and refinement of alternative developments and access: existing land use and zoning; existing facilities, such as roadways, utilities, and railroads; groundwater and water quality protections; topography; and geologic hazards.

Built Environment

- The planned concentration of commercial development along the Highway, primarily in that portion of the corridor lying within the city limits of Post Falls, will result in continued and increased reliance on auto-oriented services and shopping. Additional commercial developments within the corridor would attract area residents as well as serve as employment centers.
- Coordination of land use plans and the supporting zoning ordinances should be consistent throughout the corridor with the implementing jurisdictions.

- Realignment or abandonment of the railroad tracks in the study area could allow for conversion of these ROWs to other transportation uses.

- Subdivision of agriculturally zoned land located within Kootenai County that is prohibited. Retention provisions for open space in the Corridor should be included in local planning efforts.

- Connectivity of current street patterns should continue and be enhanced through the provision of additional facilities, as development occurs.
- Regional improvements should consider provisions for transportation choices, such as bicycle and pedestrian facilities and future public transportation.
- Places of historic value that could influence project planning include the potential of historic rail line on the Prairie.
- Public wastewater and water systems are required to serve new commercial, industrial and high-density residential development.

Natural Environment

- The Rathdrum Prairie-Spokane Valley Aquifer is a sole source aquifer for the region and is protected through careful development on the Prairie.
- New large areas of impervious surface (such as pad parking lots), with resultant storm water treatment, may impact the water quality of the recharge of the aquifer.
- The unique and natural beauty of the Prairie should be preserved through retention of open space, view corridors, and conservation districts, areas, or easements.
- Continued development and use of septic/ drain field systems should continue to be monitored for quality standards.
- Prime agricultural soils should be preserved for agricultural purposes when financially practical.
- Blowing snow and drifting create hazardous conditions that can occur seasonally along the corridor.
- Future development of the region should include the provision of open space.

Through coordinated efforts and public support, development of the Prairie should enhance the environment and seek to minimize impacts. Public desires to maintain a high quality of life in the region, while increasing opportunities for development, should serve as a guide for balanced and coordinated regional growth, which meets development standards, minimizes costs of public service delivery, and enhances the economic vitality of the area.